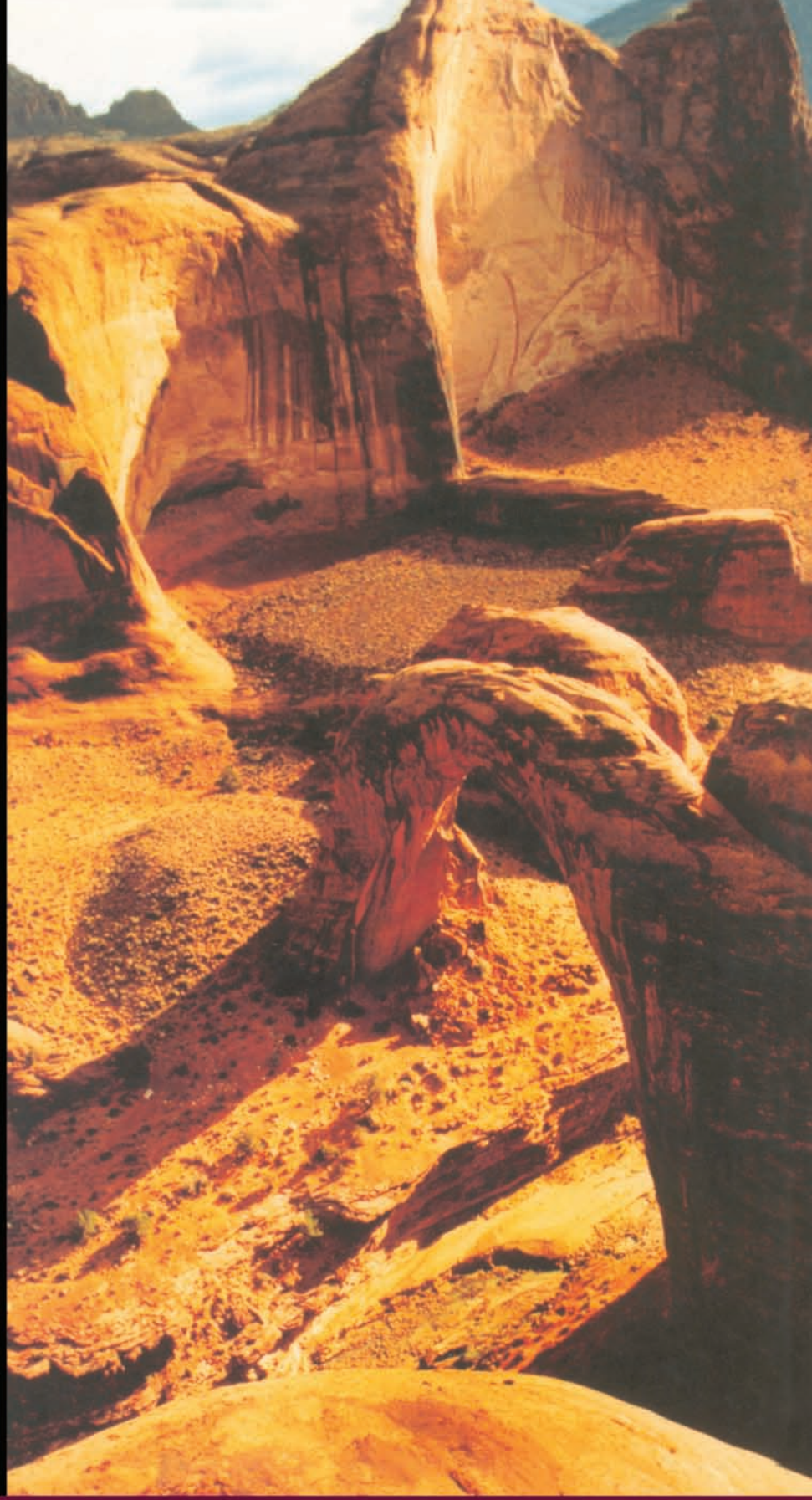
1999

Rainbow Bridge: An Illustrated History

Hank Hassell
Northern Arizona University

RAINBOW BRIDGE



An Illustrated History

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Aerial view of Rainbow Bridge, 1957

Rainbow Bridge

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Line Drawings & Maps

R. Sean Evans

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Dedicated

in respectful memory

to

John Wetherill
Byron Cummings
William B. Douglass

who revealed this inestimable
treasure to the world

and

David R. Brower,

who tried so hard to save it

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Acknowledgments

A project of this magnitude could not reach completion without the help and cooperation of many individuals, and this one is no exception. Of paramount importance is the staff, past and present, of the Special Collections Department, Cline Library, Northern Arizona University, who gathered and lovingly preserved the documents that made this book possible. Special mention must, however, go to Diane Grua, library archives specialist, and Laine Sutherland, curator of photography, who provided ideas and encouragement and who brought to light many of the historical photographs which help make the story of Rainbow Bridge come alive.

No library has everything, however, so it fell to the creatively persistent efforts of the Cline's Interlibrary Loan staff to locate and obtain a host of obscure documents from many out-of-the-way collections. A special thanks is due the folks at Duke University; the Department of the Interior Library in Washington, D.C.; the National Park Service Library in Tucson; and to Ginger Reeve at the Bureau of Reclamation in Salt Lake City for going the extra mile to provide critical sources and photographs.

A history is never written in isolation, but depends upon the research and composition of those who have gone before. In this case a special debt is owed to Stan Jones, who probably knows more about the canyons of Navajo Mountain than any man alive; to Mark W. T. Harvey, who told the story of Echo Park in such a masterful fashion; and to Russell Martin, who wrote the history of Glen Canyon Dam in exquisite detail. Without the basic research these three provided, this book literally could not have been written.

Appreciation is certainly due Susan J. McGlothlin, who read and corrected the manuscript simply out of friendship, and to Walter Hoke and Bill Hoffman, who provided companionship along the trail. Thanks also to those who provided personal photographs and reminiscences, especially David Brower, Stewart L. Udall, Ken Sleight, and Barry Goldwater.

Finally, to my colleagues in the Reference Department at the Cline Library, thanks for looking interested while listening to my endless chatter and long-winded readings of "selected" passages. It could not have happened without you!

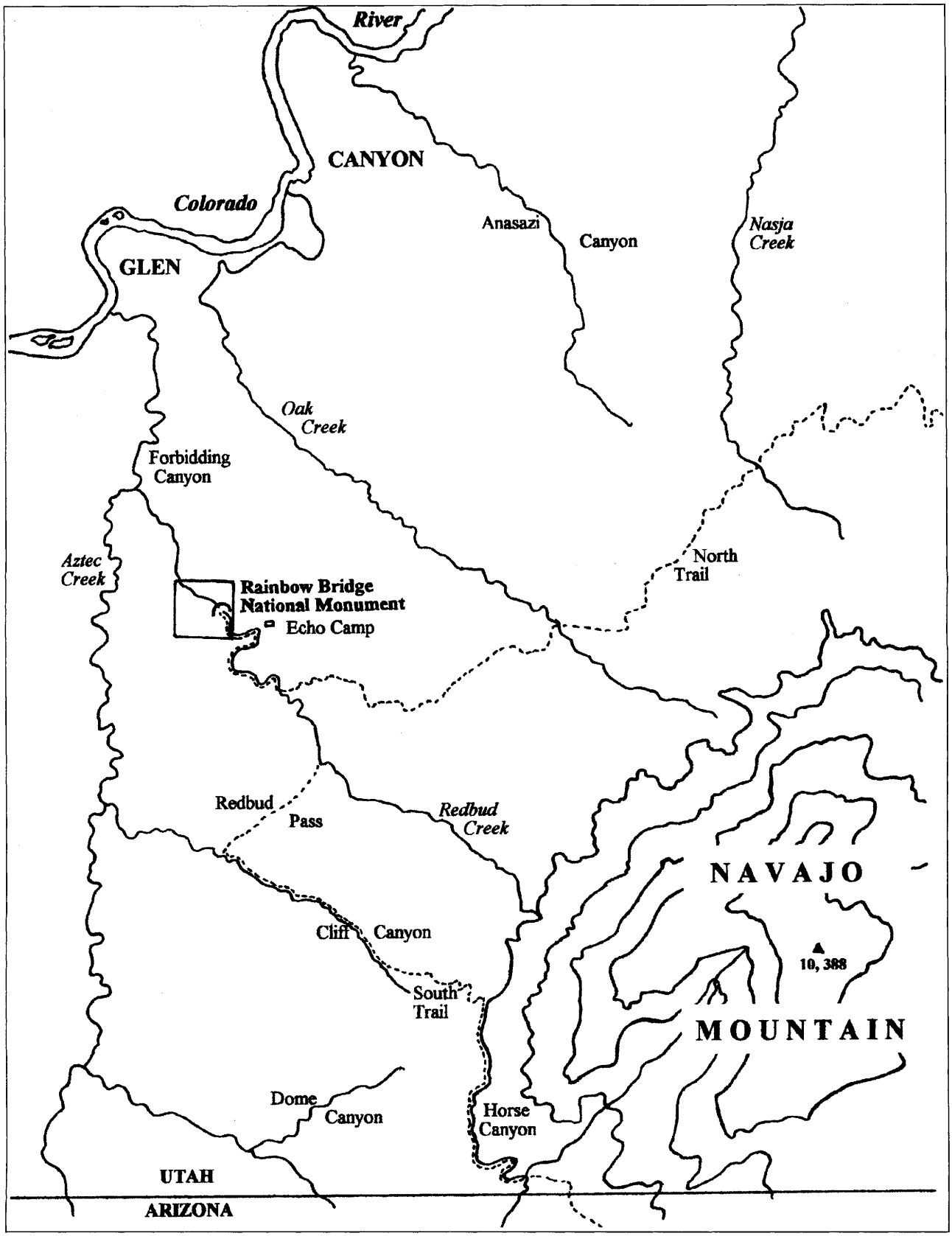
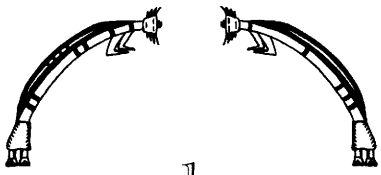


Figure 1: Map of Rainbow Bridge country



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The Rainbow Trail

Early May, 1988. Already heat is baking the canyon like midsummer, and the air feels heavy and somnolent. The sun has finally dipped behind the canyon wall to our left, so we are at last in shade. It makes no difference. The rocks and sand by the side of the trail are sending upward the day's accumulation of solar energy, and the red-orange sandstone walls radiate intensely. Every living thing that can has scurried deep underground. The spiny plants sit motionless, seemingly indifferent to the seasonal variations in heat and sun, but the cottonwood leaves hang immobile, conserving the precious moisture that the slightest movement threatens to dissipate. Even the little stream below us, which gurgled happily when we first encountered it in Redbud Canyon, has now been reduced to a series of tepid pools with only the barest hint of current connecting them. We seem to be the only moving presence in Bridge Canyon.

I glance at my watch—2:30 P.M.—and then glance over toward my hiking companion, Walter Hoke. Totally stoic as always, and a man of few words, he trudges along beside me, resigned to his fate. It was I who suggested (well, more like insisted) that we do the whole twelve miles in one day so that I could photograph the bridge in both morning and evening light. It seemed like a simple enough proposition: drive to the Rainbow Lodge trailhead the afternoon before and camp, get an early start, hike eight hours or so, and, thereby, arrive at the bridge. However, the trail has been rougher than expected, especially the hard pull up and over Redbud Pass, and the heat, for so early in the season, unforeseen. A few minutes ago we passed the junction of Redbud Creek and Bridge Creek (it was marked by a huge cairn in the middle of the stream), and I concluded, according to my less-than-precise measurements on the topographic map, that we have about one mile to go.

Hiking in the creek bottom, which we have been doing ever since crossing Redbud Pass, is an exercise in caution. Centuries of flooding and snowmelt off Navajo Mountain have filled the beds with rock, and the constant scouring has prevented any sand deposition. Hence, hiking here is like walking in a field of marbles.

Since joining Bridge Creek the trail has been leaving the stream periodically for the benches, where the going is easier, but away from the stream the air is hotter, the climbs are steep, and both of us are beginning to wear down. I fondly remember a beautiful, sheltered campsite an hour or so back and wish we had stopped.

Dawn arrived this day as it probably always does out here, OAS—Ordinary Arizona Spectacular. First the night sky begins to pale and turn slightly pink. Then the orange glow paints the east, and the high battlements of Navajo Mountain explode into flame. As day advances, color inches down the mountain and long patterns of light and shadow define every hillock and hollow of the Rainbow Plateau which lies stretched out below us. Finally, daggers of light catch the sheer sandstone walls of Cummings Mesa, and the intense red glow reflects back on the landscape miles from its sheer rock face. It is sobering to reflect that this display is probably a daily occurrence up here.

All this is going on while Walter and I arise, wash, eat breakfast, and pack up for the hike to Rainbow Bridge. We spent the night on the southwest slope of Navajo Mountain amid the ruins of Barry Goldwater's old Rainbow Lodge. In bygone days this

scene would have been alive with wranglers saddling horses and mules, tourists visiting excitedly, and the clang of metal announcing breakfast. Today only the sandstone foundations of tourist cabins remain to suggest that this was once the main staging area for horseback trips to the bridge. We are going to hike the south trail. I chose this route for two reasons: (1) it is one mile shorter than the north trail, and (2) it involves a little less driving. (It turns out that this trail is the more rugged of the two, but I didn't know that at the time.) We begin at an elevation of 6,400 feet—pinyon-juniper country, and cool; there is no hint of the heat that awaits us 2,700 feet below.

The trail from the end of the road is plain enough, and we strike out toward First Canyon. The morning is glorious, the sky a deep blue characteristic of dry climates, and the scent of wilderness enticing. First Canyon is crossed high up toward its head and is no challenge. As we turn and head up the far slope, we note the first of the red-painted metal poles the Park Service long ago placed as mileage markers. The trail now begins to climb, and within another half-mile we cross into Utah and descend steeply into Horse Canyon(plate 1). This is a big drainage, extending well up Navajo Mountain, eventually spilling into Tsagieto Creek, and from there to Aztec Creek. The descent to the boulder-strewn creek bed is through a conglomerate of loose rock and soil, probably from a landslide. As Navajo Mountain pushed up through the sedimentary rock, which used to lie in flat beds, everything was set into motion. This is more and more evident as we contour toward Dome Canyon. Huge boulders lie tilted at crazy angles, and rocks from different layers—siltstone, mudstone, sandstone, and limestone—mix together in a weird, surrealistic geologic jumble. The climb through this rock maze is rugged, and the boulders and the steep mountain slopes block the view in any direction. Suddenly we emerge into the open, and the land drops away at our feet. We have reached Yabut (Sunset) Pass, mile 4.8, and are on the north side of Navajo Mountain. The view snatches away what little breath each of us has left. At our feet the broad drainage of Cliff Canyon stretches out to the northwest. Directly in front of us, far across Lake Powell, stands the forested rim of the Kaiparowits Plateau, still over a thousand feet above us. To the right and below lie the orange hummocks and domes of the Rainbow Plateau. Threads of green mark the intermittent watercourses, and dark gashes show the innumerable canyons which dissect the plateau into uncountable fingers and ridges of rock. To the left stands the great table of Cummings Mesa rising vertically from the surrounding landscape and towering over it like a throne. Down there, somewhere, hidden in the labyrinthine maze of stone and light lies Rainbow Bridge. It is no wonder that it wasn't discovered until 1909. Only a fool or a madman would venture into that country and hope to find his way out again. We, however, have a trail.

It dive-bombs down the mountainside in a series of tight switchbacks following the ridge of an ancient landslide. The trail is hard-packed and covered with small pebbles. Caution is the watchword, therefore, and the constant need to brake on descent begins to tell on the hip and ankle joints. When the bed of Cliff Canyon is reached, however, the trail levels out and slides smoothly and gently down the canyon (plate 2). After this morning's up-and-down scramble, this seems a luxury worth savoring. At mile 7.8 we reach a spring and pool named, aptly enough, First Water. It's only 11:00 A.M., but the cool water and sheer beauty of the spot simply beg for an extended stay. We shed our packs and make this our lunch break. We have made good time—eight miles in four hours—and are now well over halfway there. The watercourse is in the shade, and so we lean back against the canyon wall and savor the scenery. A small stream emanates from First Water and trickles down toward the campsites only a short distance away on the right. Watercress and other aquatic plants grow here, so the spring must be permanent, at least through the warm months. Clearly, this was a favorite stopping place for the generations of hikers who have made this trek. In 1922, Charles Bernheimer camped here for nine days while trying to find a route from this canyon across to Bridge Creek.

We have dropped two thousand feet in elevation since setting out early this morning, and as we don our packs once more and step back onto the trail, the noon sun is shocking in its intensity. Newly fortified by rest, food, and water, however, we step bravely down the trail and within half a mile are ready to leave Cliff Canyon and ascend toward Redbud Pass. The junction is marked with a number of Anasazi pictographs, showing that the Ancient Ones probably used this route to travel between drainages. Someone has also painted a small directional sign pointing to the right, just in case we are inclined to miss the trail. Cliff Canyon turns left and heads for

Aztec Creek; we turn right and head for Redbud Creek.

Redbud Pass is not really a canyon or a pass, simply a flexure in a joint between layers of sandstone. Bernheimer found it in 1922 and concluded correctly that it would take him where he wanted to go. It would not do for horses, however, so Bernheimer used dynamite, TNT, and black powder over the course of six days to blast a route that his pack train could negotiate. He must have done a good job because this route was used for decades by countless horseback parties coming down off Navajo Mountain. Today the trail through the pass cannot be followed on horseback and is only marginal for hikers with large packs, such as ourselves. The initial pitch is steep and rocky, and several times I find myself climbing hand-over-hand. The pack scrapes brutally against the rock, disturbing my precarious balance, and the heat becomes painfully evident. At the summit we stand in a narrow slot with great sheer walls of sandstone towering above us. Looking down the way we have come makes one pause in wonder that horses ever made it up intact (plate 3). The route down the other side is even more precarious. One spot in particular is downright dangerous, and I negotiate it seated, letting myself down with hands and arms behind me.

The foot of the pass brings us to Redbud Creek, which is running a nice flow from the snow still lying on Navajo Mountain. Though only a mile in length, Redbud Pass has exacted a heavy toll on our energy and enthusiasm, and we take off our packs and slosh the cool water over hands, arms, face, and neck, not once but several times. The relief this brings is slight because the stillness of the air slows evaporation off the skin. We are now hot, wet, and uncomfortable, but we stand at mile 9.6—only a bit over 2.5 miles to go. The scenery here is stunning; the canyon is narrow and the polished walls of pinkish-orange sandstone rise 1,700 feet above us. Thin, dark streaks of waterborne minerals paint a delicate tapestry, and the great black stains of desert varnish dye the rock with a myriad of abstract patterns (plate 4). The acid green of the Fremont cottonwood contrasts sharply with the red of the rock and soil, while here and there purple aster, scarlet gilia, and waxy yellow prickly pear dot the sandbanks. This clearly is a blessed, sacred place.

As we move down canyon a number of shaded, sheltered campsites beckon. I politely ask Walter if he wishes to stop for the day, and he replies, equally politely, with a shrug and an "I don't care." I am still determined to make the bridge today, and Walter's lack of emphatic objection steels my resolve to press on. The brave, sure pace of the morning has been replaced by a resigned plodding and an occasional shuffle. The pack claws into my shoulders and I can feel my hips redden where the belt chafes the skin relentlessly up and down, back and forth, with each step. However, in a little over a mile we reach Bridge Creek, and the goal is now within our grasp.

One of the more pleasant thoughts drawing me on concerns the lovely campsite where we plan to stop for the night. I've never been to Echo Camp, of course, but I have seen pictures and read descriptions. Located less than half a mile from the bridge, it is situated in a huge alcove at a great bend of Bridge Creek. At least one flowing spring feeds into a lovely pool ringed with water-loving vegetation and great old cottonwoods. Paying customers from Rainbow Lodge made camp here in specially- constructed tents with wooden floors and slept in beds with clean white sheets. Sheltered from the desert sun by a half-dome of overhanging rock, Echo Camp must have seemed a veritable paradise to the sore and weary travelers who sought its shelter. For us the sight of it would be a most welcome and fitting end to a particularly punishing day.

We have seen no other souls since arriving at the ruins of Rainbow Lodge the previous afternoon, but that suddenly changes in a most dramatic fashion. Less than three-quarters of a mile from the end of the trail we are suddenly overtaken by, of all things, a horseback party. One man and three boys, all Navajo, have apparently ridden down the north trail and are bound for Echo Camp. In a brief conversation with the lone adult, I ascertain that they are planning to stay two nights. Well, what the heck, it is their land, I suppose, and the alcove should be large enough for two parties. We trudge on. The trail now rounds a hairpin turn and climbs out of the creek bed for the last time. Straight ahead looms the canyon wall, and it seems as if the stream has nowhere to go. We cross a gated fence, obviously intended to keep stray livestock out of the vicinity of the bridge, and glance to the left. Bridge Creek, about fifty feet below us now, makes a right angle turn and heads due north. From our elevated perch we have an unobstructed view straight down the canyon, and there, staring back at us from a half-mile away, is Rainbow

Bridge. The west abutment is hidden by an intervening fin of sandstone, but the east abutment and almost the whole of its beautiful arching corona are clearly visible, backlighted now by the intense afternoon sun. Within the grand expanse of the canyon it seems almost delicate, rather like a wedding ring somehow misplaced, and graceful nearly beyond describing. It is the view that Byron Cummings first got of the bridge in 1909, and it is this view that countless others have had upon arriving at this spot from Navajo Mountain.

We pause to drink it all in, but it is now 3:15 P.M. and we have been on the trail over six hours. Exhaustion is beginning to be a problem and making camp is a top priority. We are now only a few hundred yards from Echo Camp. The great cool embrace of the alcove, now in deep shadow, beckons, and our weary feet press our burdened, aching bodies forward. The camp is everything I dreamed it would be—lush, well-watered, and temperate. Cut into the sandstone by a long-abandoned meander of primeval Bridge Creek, the alcove is fronted by a beautiful pool of clear water fed by a spring flowing from the south wall.

However, the camping prospects are looking very bleak. The horseback party we encountered earlier has occupied the premises and sharing seems not to be a priority. The children are spread out all over the place and are wreaking havoc with the solitude. The horses are being allowed to roam freely, and two of them are firmly planted in the middle of the pool calmly munching on water plants and fouling the spring. The adult supervisor seems blithely unconcerned with our need for a campsite and even more unconcerned about the effects his horses and children are having on the environment. My Navajo Tribe Hiking and Camping Permit hangs in plain view from the upper left pocket of my pack, and I briefly contemplate making an ugly scene—a nice speech about camping manners begins to form in my brain. I realize just in time how futile this would be and turn away. Walter has positioned himself on a rock by the pool, his face mirroring weariness and disgust.

I know we must find an alternative stopping place and quickly, but here the pickings are slim. Continuing on downstream is not an option, as camping within the national monument is strictly forbidden and Lake Powell has covered everything further down. Accordingly, we turn back up the trail, retracing our steps with a sense of bitter disappointment and resignation. I am troubled by the fact that I can't remember seeing a decent campsite for over a mile, and neither of us is in any condition to backtrack that far. We descend to the creek bed at the last turn of the trail and look around. The creek bed and both banks are a jumble of stones; no spits, sandbars, or dunes sufficient to cradle a lizard, much less two sleeping bags. I check around the corner and look a bit further upstream—still nothing. A sense of desperation begins to gnaw at my heart. I drop my pack by the side of the trail at creek-side and head back down canyon, eyes scanning for any possibility no matter how unlikely or flawed. From the trail, well above the creek bed, I can scan the whole canyon floor, like an eagle in search of prey. Walter remains with the packs—as trip leader this is my responsibility and I know it. I squint into the gathering twilight hoping to see any break in the rock mosaic spread out below me, and then, near the left bank of the stream, I catch a white reflection. On the lee side of a large boulder, nearly hidden in the lengthening shadows, is a spit of pure white sand. Probably carried there and deposited by the last flash flood, the boulder has protected it from being carried off. From above it seems pitifully small, but maybe up close . . . I pick my way down from the trail, stumble across the creek, and cross my fingers. Upon approach a paradise is revealed. The sand is deep, clean, cool, and covers enough area for two people, plus. I hurriedly rejoin the trail and move upstream, anxious to share the good news with Walter. Gear is assembled, packs are shouldered, camp is reached, and we both collapse into the sand with unmatched glee.

After supper, I gather myself together and prepare to walk down the trail to the bridge. Walter has decided not to join me—the temptation to simply sit and contemplate in silence on this most beautiful of evenings is just too great. I sympathize with his point of view, but since I put both of us through a very rugged day in order that I might take photographs in evening light, I feel obligated to make the trek and take the pictures. Evening light is usually the premier time for getting great pictures in the Navajo Sandstone. High sun, such as one gets at noon, bleaches the colors, while the slanted rays of twilight or sunrise accentuate the reds and oranges and highlight the contrasts.

Once beyond the entrance to Echo Camp the trail makes a sharp turn and follows the creek due north, staying high on the Kayenta bench and affording a

superb view of the bridge. The canyon at our camp has been in shade for some time, but the bridge is still illuminated by full sun which, backlighted as it now is, gives it an ethereal quality. The twenty-minute walk down canyon, therefore, has about it the air of a spiritual pilgrimage. The bridge grows ever larger and more imposing with each step, and at last the trail passes right under the bridge next to its eastern foot. While the view from a half-mile away made the bridge appear small compared with the imposing depth of its canyon home, the view from underneath is one of nearly overwhelming grandeur. From where I stand, the bridge soars 212 feet above me with a thickness at the crest of 42 feet. The width at the top is 33 feet, which is easily enough space to construct a two-lane paved highway. The gorge beneath my feet drops 79 feet, meaning that from bottom to top, the arch is 291 feet high. Those with their eye on comparisons are fond of pointing out that this is slightly less (by six feet) than the distance from the floor to the tip of the statue atop the dome on the U.S. Capitol Building. From one side of the bridge to the other under the arch is 275 feet. The span of Kolob Arch in Zion National Park is somewhat longer, but Kolob Arch is not a bridge. Hence, Rainbow is the largest known natural structure of its kind in the world. (To qualify as a bridge as well as an arch the rock must actually bridge a watercourse, with or without a flowing stream. Kolob Arch is perched on the face of a cliff and, therefore, does not qualify as a bridge. The beautiful Entrada Sandstone windows in Arches National Park are almost all natural arches, while the three Cedar Mesa Sandstone spans in Natural Bridges National Monument are all true bridges, albeit smaller than Rainbow.)

Standing beneath the bridge, as I do now, gazing up at the massive, yet delicate, form curving above me, I am struck by the sheer perfection of this sculpture. Clearly, it is very old, especially compared to the Kachina and Owachamo Bridges in White Canyon near Hite. Time and the forces of nature have been at work here, shaping, rounding, and tinting the sandstone to the point where the fabric of the bridge is nearly cylindrical, almost like a gigantic elephant trunk reaching from the canyon wall opposite into the sand at my feet. In most natural bridges, the arch shape is present only on the bottom of the bridge, the top retaining the flat surface characteristic of most sedimentary rock. Here, both top and bottom of the bridge are curved, giving the bridge its distinctive rainbow shape and, hence, its name. This is, itself, a compelling argument for the very advanced age of the bridge; once the stream poked an opening in the ancestral sandstone fin, Bridge Creek no longer contributed in any significant way to the formation of this masterpiece. All was left to the wind, rain, frost, and sun, these forces chipping away at the gap in the rock, opening cracks, forcing a breach, blasting away a grain at a time until today all that remains is a sinew of sandstone hovering between heaven and earth in supreme testimony to the power and artistry of the creative forces still at work in this place. Our race is indeed fortunate to be present on this planet at the precise moment when such utter perfection of form and substance has been reached. Nowhere else is there anything comparable to Rainbow Bridge—it is a once-in-creation achievement tucked away in this most unlikely corner of wilderness, once accessible only to those few determined enough to seek it out.

With the light fading and the shadows beginning to play over the rock walls of Bridge Canyon, it is time to find a good spot for picture-taking. I walk under the arch and continue on downstream a short distance. It is not possible to go very far, as Lake Powell has claimed all of Bridge Canyon below Rainbow Bridge. Indeed, in order to get the view I want it is necessary to stand on the National Park Service boat dock. Aerial photographs taken before the monument was flooded show that the walls of Bridge Canyon pull back some just downstream from the bridge before once again closing in a half-mile further on. This open area, now covered by water, has formed a bay, perfect for landing boats and disembarking the thousands of tourists who now motor up-lake from Wahweap or down-lake from Bullfrog for a quick glance and a few photographs. This time of day no boat tours will be arriving; the dock is deserted and silent.

At first the evening seems disappointing, at least for pictures. A few clouds in the west are dissipating the light—the brilliant colors are not appearing. A lone couple in a motorboat approaches the dock. Seeing me and not seeing a boat confuses them. They ask how I got here and when I expect to be "picked up." Upon hearing that I walked in and intend to depart the same way, their confusion gives way to a studied indifference. They don't stay long; in search of a campsite they motor quickly down the lake and the monument is once more bathed in silence. With only a short time left till sunset, I grow apprehensive about

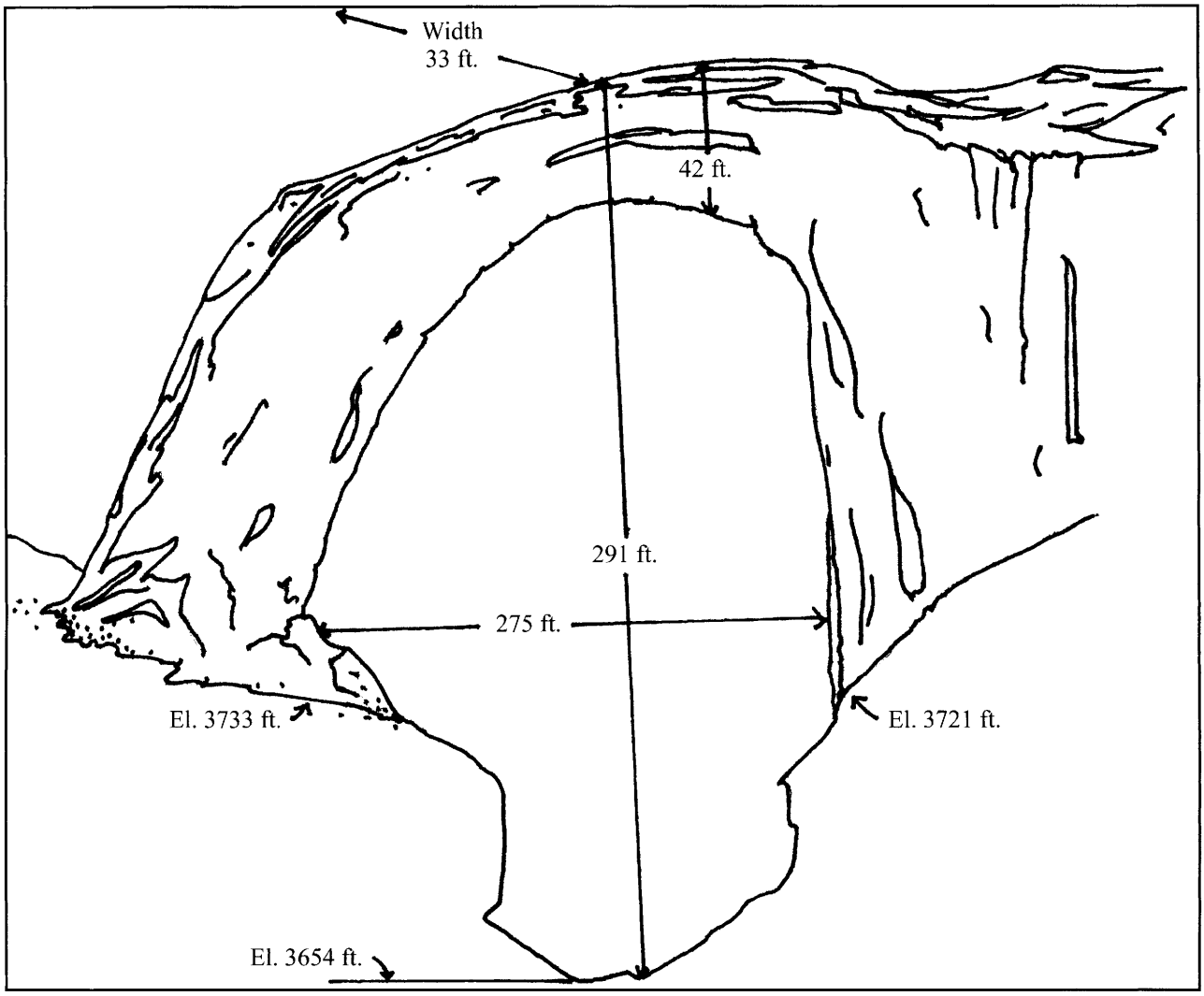


Figure 2: Schematic diagram of Rainbow Bridge looking upstream

getting any good shots. I needn't be. As the sun dips toward the west wall, it finds a slot underneath the thin line of clouds; the bridge and its environs are suddenly splashed with brilliant contrasting patterns of intense light and shadow, changing minute by minute. The translucent sky, the backdrop of Navajo Mountain with its thin rivulets of snow, the bridge itself now a patchwork of tint and shade, all create an other-worldly aura of sublimity and contentment. Tonight I share this with no one (plate 5).

The show ends as quickly as it began. Amid the deepening twilight I move up the trail, under the bridge, and back toward camp. The mesa tops and canyon rims above me are still in sun, but the depths below are progressing rapidly toward night. I slide into camp as noiselessly as possible, not wishing to disturb Walter's reverie. He seems content to have been left alone for an hour and has made himself quite comfortable on our little beach. I proceed to do likewise and then sit back to observe the vermilion darkness gather in around us. The moon is large tonight, but with only a slit of sky above, its light will not intrude much on our little world deep in the canyon country. The retreat of the day has brought an occasional cool breeze wafting up and down the stream bed, and an air of quiet satisfaction pervades this place. Now, two months past equinox, darkness comes late, and sleep soon begins to intrude on my meditations. I succumb gratefully, curling into the soft sand and focusing on the soft rush of the canyon breeze and the faint murmur of water sliding past the rocks.

Plate 1: Rainbow Trail on Navajo Mountain, near Horse Canyon

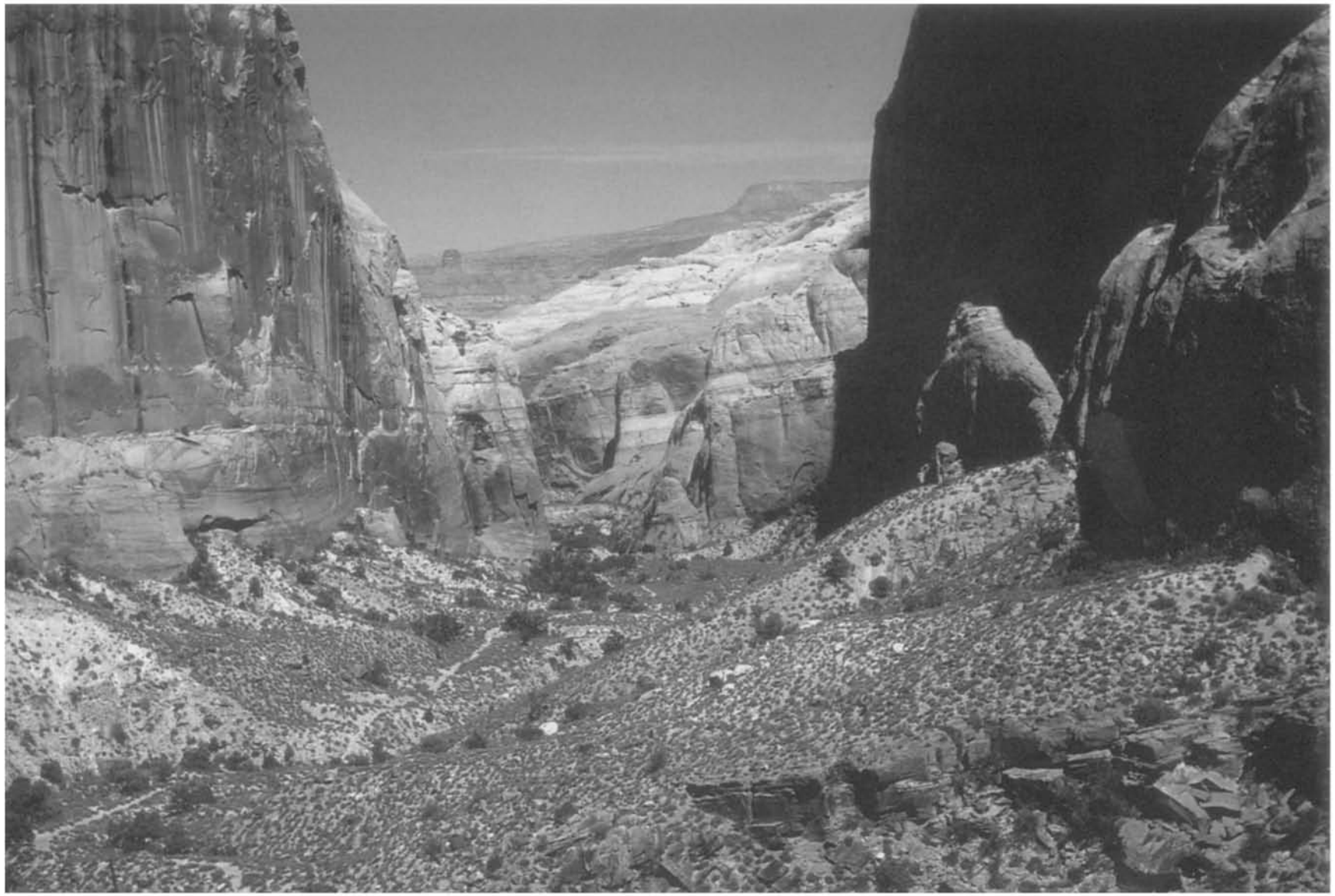


Plate 2: Looking down Cliff Canyon along the Rainbow Trail

Plate 3: Redbud Pass, looking back toward Cliff Canyon

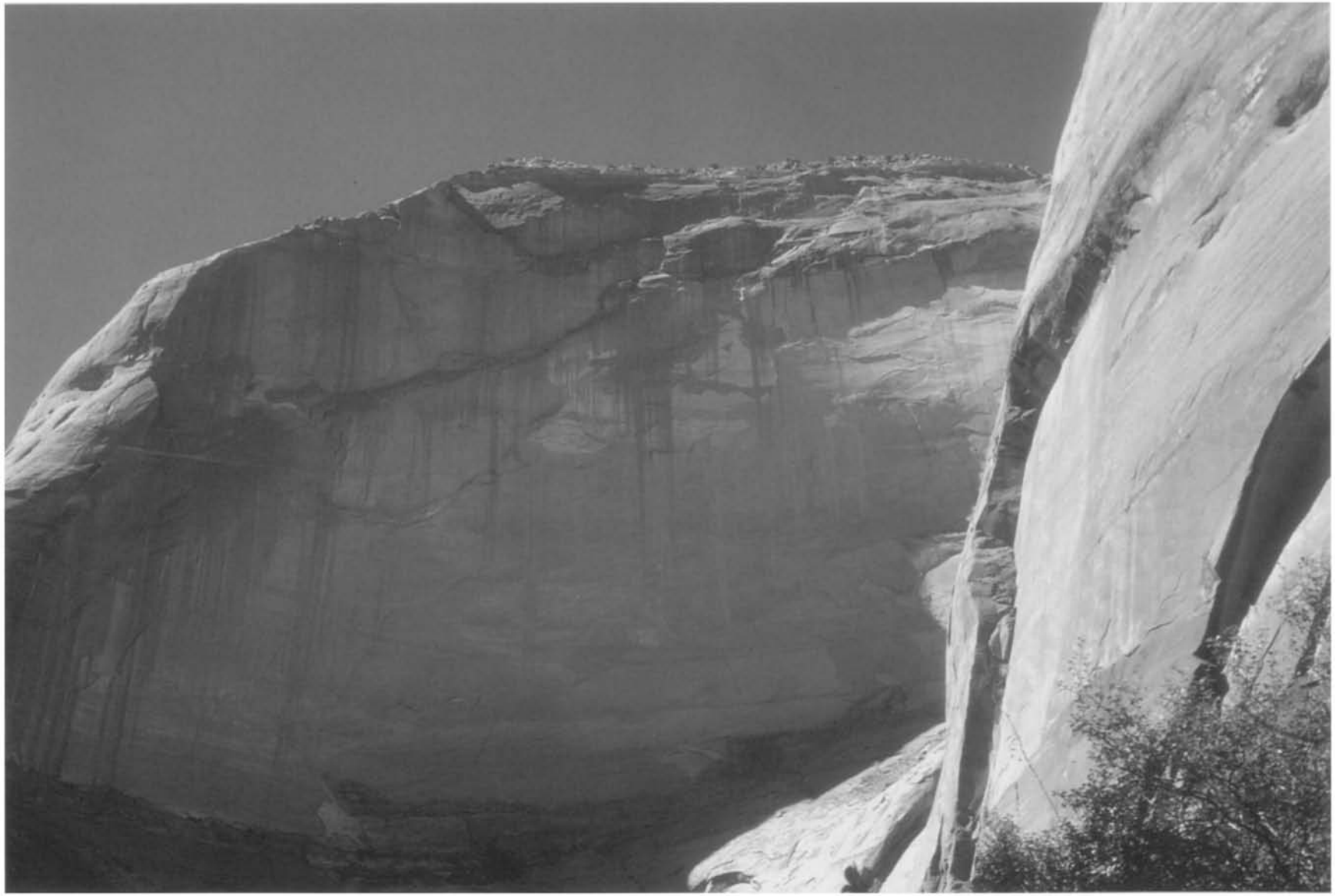


Plate 4: Wall detail, Bridge Canyon

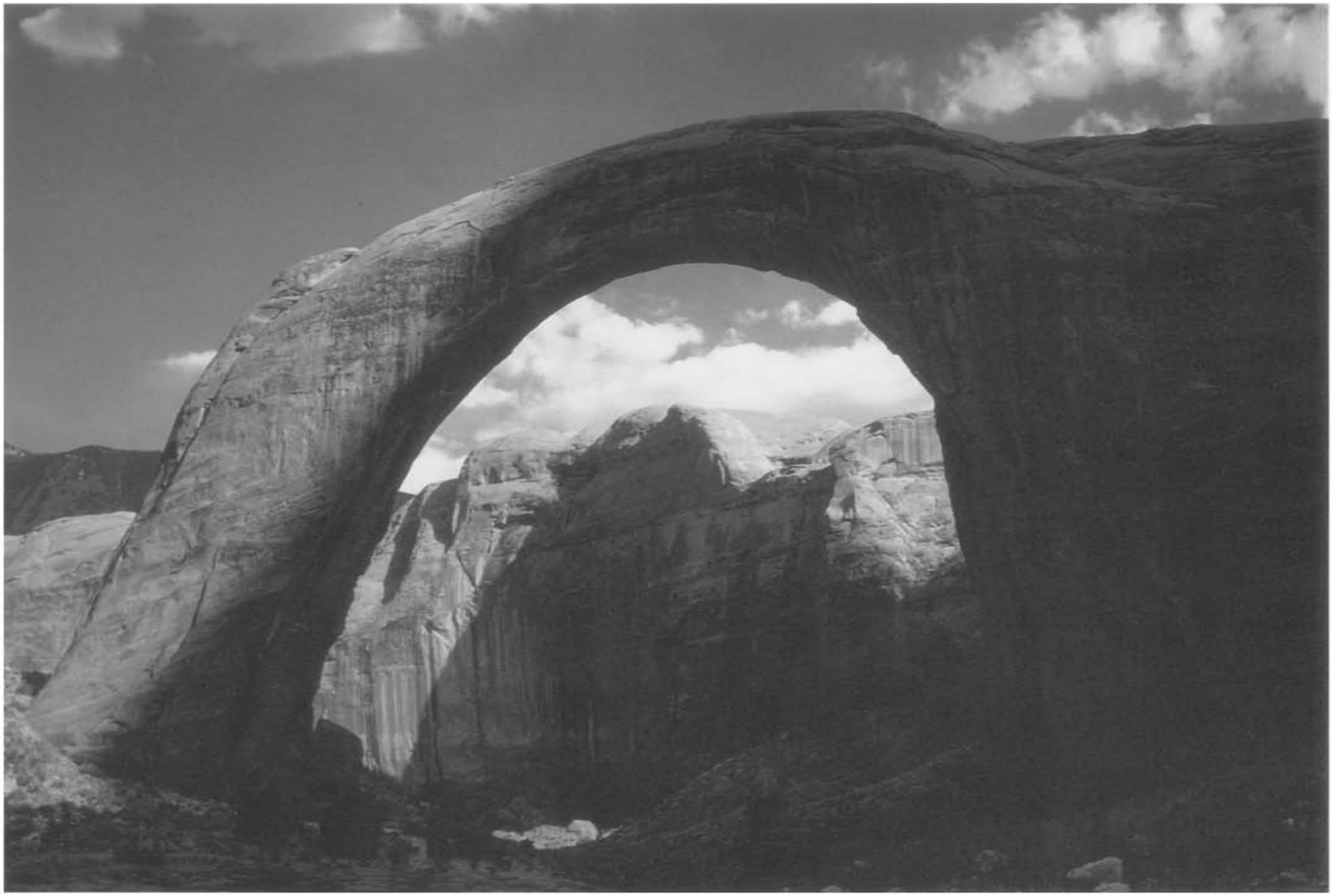


Plate 5: Rainbow Bridge at sunset, the view from Lake Powell

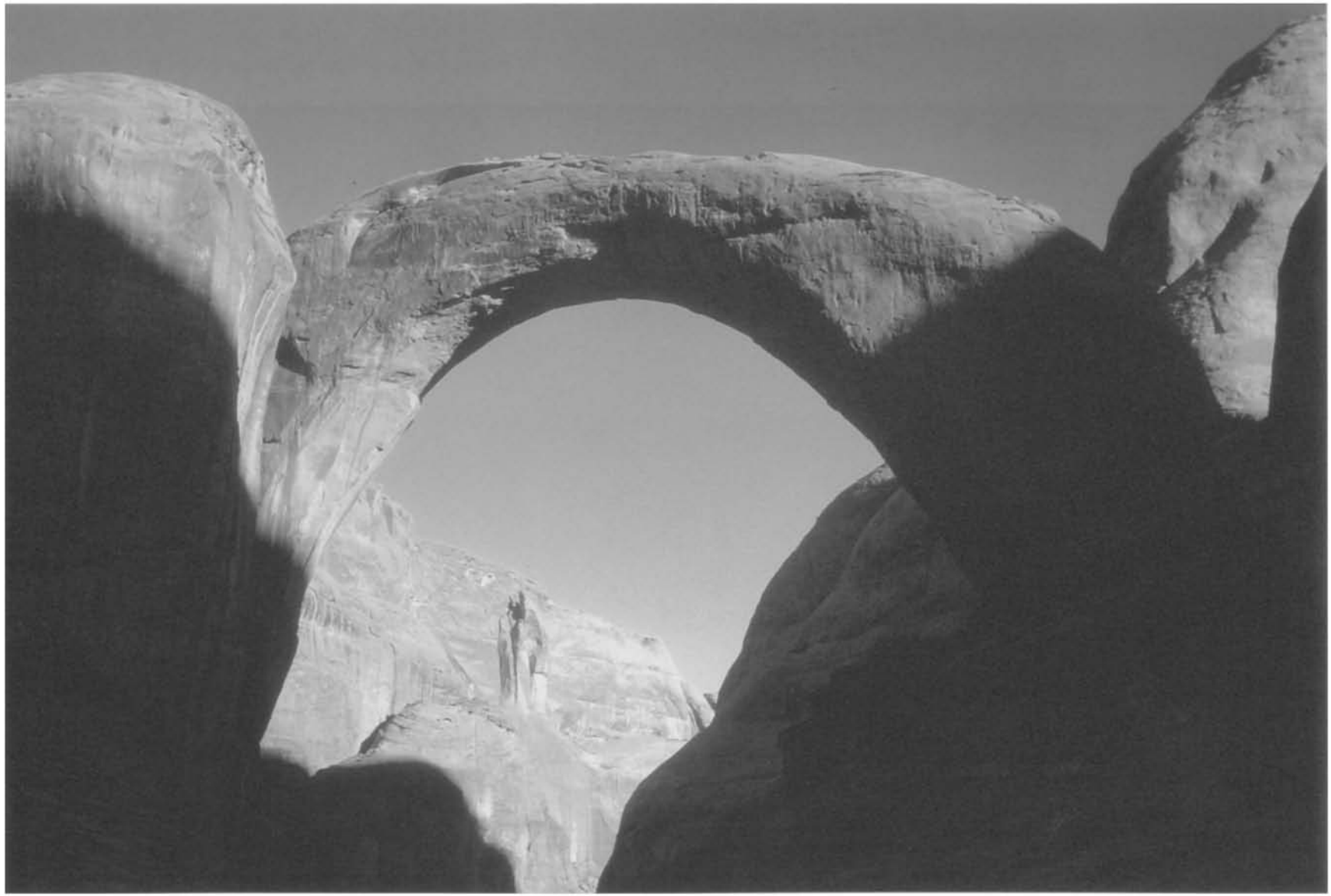


Plate 6: Rainbow Bridge at sunrise, the view from Bridge Creek

Plate 7. Narrows of Forbidding Canyon

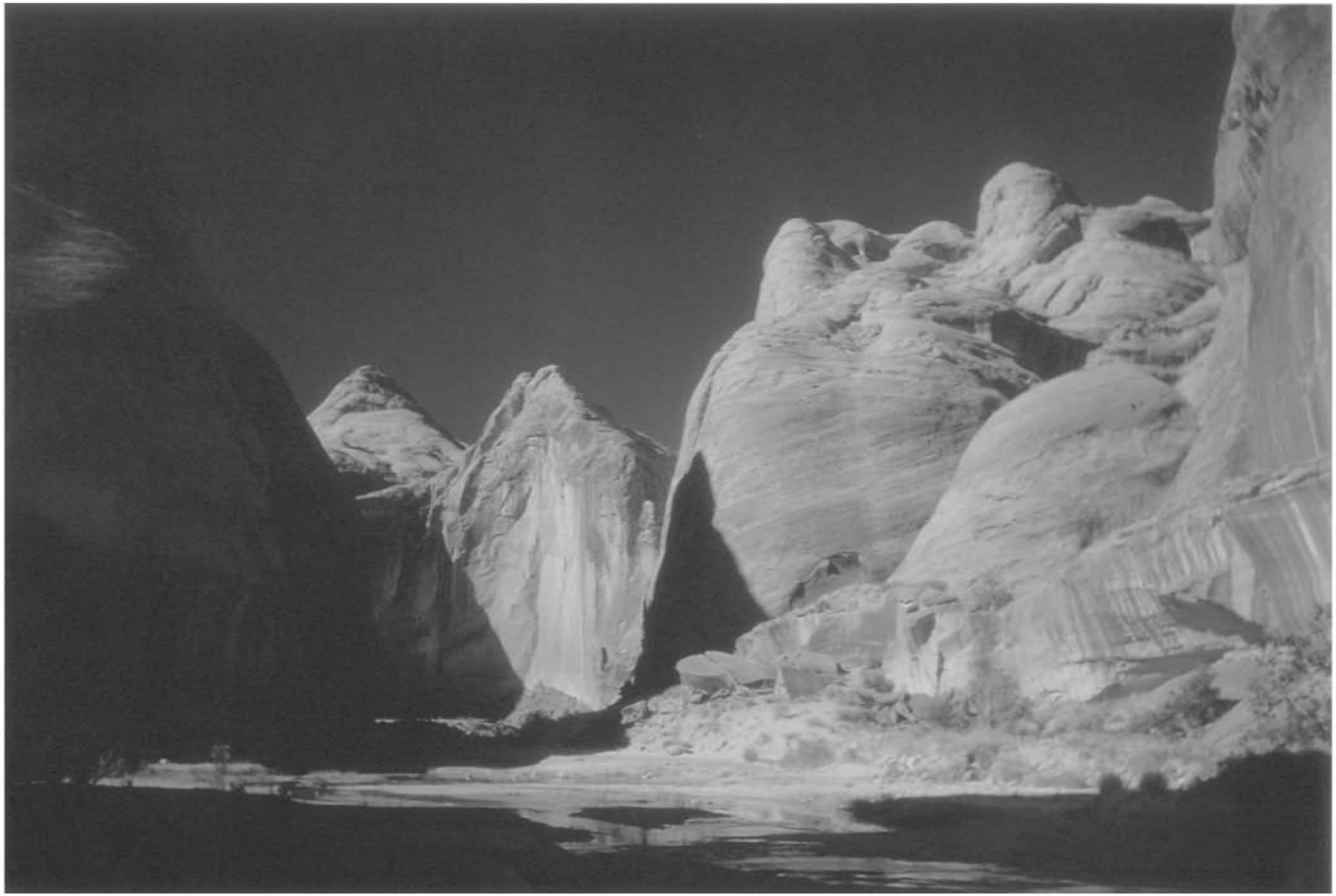


Plate 8: Evening, Aztec Creek, 1955. The hike up this canyon from the Colorado must have been a stunning experience.

Plate 9: Art Greene's boat

Plate 10: A pristine Rainbow Bridge National Monument awaits its fate, 1955.

Plate 11: Junction of Bridge and Aztec Creeks, 1955

Plate 12: Bald Rock Canyon at the modern trail crossing

Plate 13: Owl Bridge

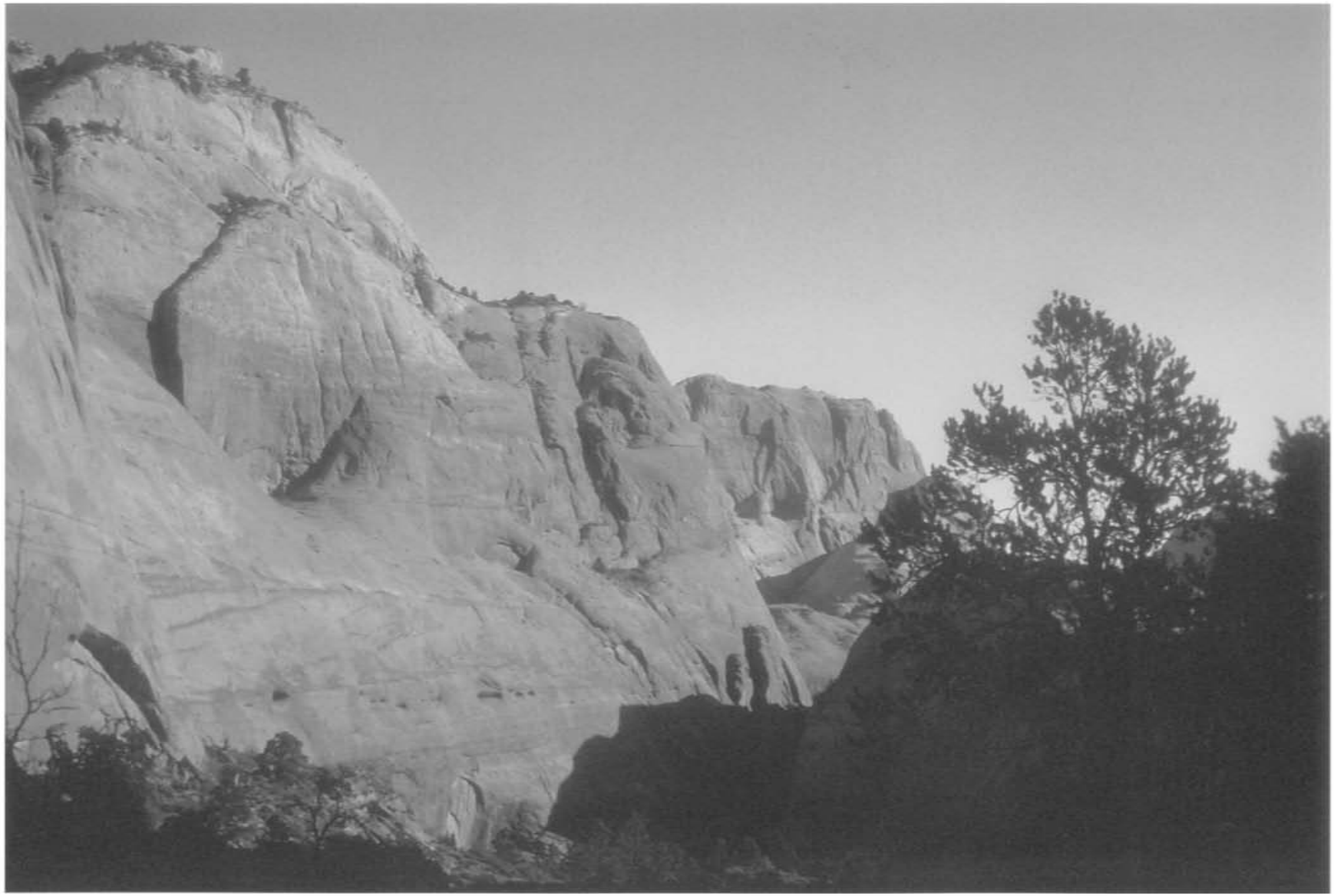


Plate 14: Nasja Creek, looking east toward Surprise Valley

Plate 15: Eastern tributary of Bridge Creek

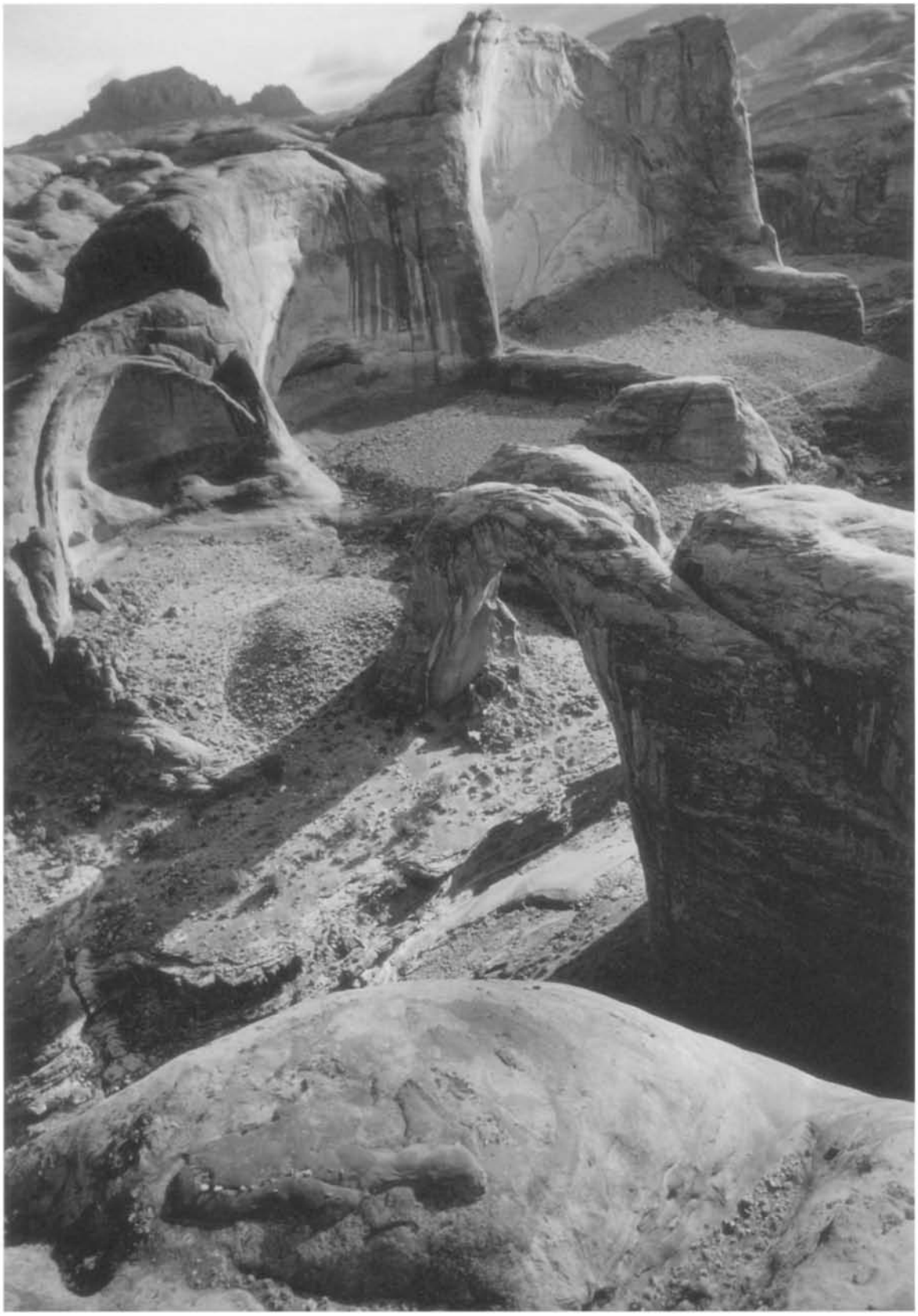


Plate 16: Rainbow Bridge today

Just as night came late so does dawn arrive early. Sunlight is already splashing the plateaus by the time I arise, so I know haste is necessary if I'm going to take advantage of morning light at the bridge. In short order Walter and I are marching quickly down canyon; all the while the glorious herald of a new day is inching slowly down the cliffs. The sky is a deep, rich, unblemished blue, and the contrast with the orange sandstone walls is intense. Rounding the bend I note, with relief, that the bridge is still in shade. Walter moves on ahead, intent on seeing the bridge on his own. Once through the monument boundary gate I search for a way down to the creek bed. Inching my way down over the Kayenta ledges, I soon find myself on sand just a short way above the bridge. The ground is fine and moist, probably deposited by Bridge Creek as it entered the slack water of the reservoir when Lake Powell was significantly higher. I sit down on a nearly flat boulder and wait for the show. A canyon wren sends its descending trill echoing through the morning stillness. Of all the sounds I have come to associate with the canyon country, this one is perhaps the most beautiful. Many species of birds are native to this area, but none have a song more distinctive, more clear, or more cheerful. I doubt I have ever seen this little songster, but his melody is everywhere.

In a very few minutes sunlight tints the top of the arch, and minute by minute the rising sun crawls down the span. Soon the entire center of the arch is illuminated and the light begins to creep laterally. This is perhaps the finest view of the bridge possible (plate 6). There is no subtlety or gentleness about this morning's display; the arch is set off starkly from the sky, brilliantly illuminated as if in a spotlight by the new rays of sun. The sharpness of the image is overwhelming in intensity, the central span of the bridge seeming more a part of heaven than earth. The lighted portion appears cut off from its earthly moorings and seems to float above me, nearly perfect in its symmetry and alive with a richness of color impossible to describe. The memory of the previous day's travails now slips into insignificance; anyone would pay even more in inconvenience, discomfort, and blisters for a performance such as I am getting this morning. My enjoyment of this spectacle is enhanced by the knowledge that my own two feet could set me here and have, and this appreciation of accomplishment also connects me to the brave men who first set eyes on this place and the countless adventurous souls who came after, whether by horse or on foot. They, too, must have realized that Rainbow Bridge is at least one part adventure to go with two parts spectacle.

I climb back up to the trail and find Walter standing near the bridge's east abutment. He came with me on this trip because he felt, as do I, that Rainbow Bridge was an experience to be earned, not simply purchased as the price of a boat ticket. I may never know his real feelings about the value of this experience, but I rest easy in the knowledge that no one could have choreographed a better or more spectacular performance.

We turn back up-canyon to camp and breakfast. We shall spend another day in Bridge Canyon but it will not be at this place. Shortly, the first boat load of tourists will begin arriving from Wahweap and Bullfrog Marinas, which will do nothing for the precious solitude this place has offered us. It is also imperative that we find a campsite out of the afternoon glare where we can hole up during the most intense heat of the day, and this spot will soon be in full sun. With the canyon still in shade and the morning air cool we retrace yesterday's footsteps and soon find ourselves back at the junction of Redbud and Bridge Creeks. We select a campsite under a large overhang which offers the added advantage of being screened in front by a curtain of trees and shrubs. Here we deposit our packs out of sight of the trail and prepare to day-hike up Bridge Creek.

The goal of this hike will be to reach Oak Creek, which is the next canyon to the east. To get there we need to ascend Bridge Canyon and climb out onto the face of Navajo Mountain, where the views alone should make the effort worthwhile. The trail up-canyon is rock-strewn and difficult, but without heavy packs on our backs the walking seems easier and less treacherous. The canyon is exceedingly beautiful, so much so that it scarcely seems proper to hurry through it. As we begin to climb above the creek bed, we are treated to a delightful view of a series of pools and small waterfalls formed as the creek makes its way from the slopes above through the bouldery confines of the canyon. I make a mental note to stop here for pictures and refreshment on the way back. By now the sun is high and the temperature is rising quickly.

Near the place where the trail crosses Bridge Creek for the last time, we encounter a sight I had not expected to see—redbud in full bloom. A member of the pea family, this shrub grows, on the Colorado Plateau at least, only in the canyons of the Colorado River and its tributaries. When in full

bloom, it is festooned with bright pink flowers of unmatched beauty. At Indian Gardens in Grand Canyon it attains a height of over twenty feet, but here it is a low shrub which will probably never get to half that height. In fact, I have never before seen this shrub at this elevation. Encountering it here, at what is probably the upward extent of its range, is a treat which adds luster to an already shimmering day.

Soon after leaving the clump of redbud the trail turns due east and begins a steep, sandy climb toward the plateau above. There is no shade here, the canyon being both dry and shallow, and the double reflection of sun off the canyon walls and the white sand of the trail makes this place much like the inside of an oven. A small spring on the way up provides enough water for splashing head and neck, but the relief this offers is short-lived. Toward the top of the trail we slip into a shallow alcove, which offers some shade, for a combination rest and lunch stop. The shelter afforded here will be very temporary, as the ascending sun is relentlessly driving the shade further and further toward the back of the alcove. We stay as long as is practical and then once again find ourselves out in the noonday glare. In this heat the struggle upward through the deep sand requires a lot of effort and expends more energy than is advisable. When we at last reach the plateau at the head of Bridge Canyon we both determine that enough is enough—Oak Canyon will have to wait for another day. The view from here is, however, incredible. Behind us the great bulk of Navajo Mountain elevates its forested mass to over ten thousand feet. It is all the more impressive from here because we are standing now in the midst of its north face and the whole mountain is open to our gaze. In front of us the tabular Kaiparowits Plateau at Navajo Point directs its bone-like finger straight at us. At our feet lie the humps and domes of the Glen Canyon country, bisected by countless rills and furrows directed toward Lake Powell. To our left the steep defile of Bridge Canyon leads downward toward camp, while to our right the trail snakes its way toward the east across the plateau. Following this route, with no track to guide them, the members of the Cummings-Douglass Expedition of 1909 must have felt like wandering flyspecks in the vastness of an unmarked and virtually unknown wilderness. To be here lost and alone would be a frightening experience.

Hiking down the canyon is much easier than our ascent and in no time we are back on the canyon floor. I take my promised detour over to the pools and cataracts I observed on the way up and find myself in a delightful paradise of monkey flower, columbine, mosses, and deep, clear water. Dropping over the boulders in its path and meandering from pool to pool, the stream is a refreshing delight in an otherwise heat-scarred landscape. Barely a half-mile up the trail there isn't nearly this much water in the stream bed, so the vigorous flow here must come from springs very close by. As the water moves down-canyon its flow is gradually absorbed by the sand and sucked up by the heat, but it never quite disappears. It eventually adds its tiny flow to Redbud Creek, and the two tumble lazily in tandem toward Lake Powell.

Camp is reached just as the canyon is sizzling under the hottest part of the day. The shade of the rock wall at our back and the screening by the vegetation in front provide a most welcome shelter from the afternoon brilliance, and we spend the balance of the day doing essentially nothing. About 4:00 P.M. a young couple come bounding down the trail heading for the bridge. They carry no pack, food, or sleeping bag and have only a couple of water bottles between them. From this point a trip to the bridge and back will occupy a couple of hours, so there is really no way they can do that and be back to the trailhead by dark. In fact, I wonder whether it is possible for them to get to their vehicle from here at all without counting on moonlight, which will expose them to more danger than would be prudent. Aside from the obvious rugged nature of the trail, which can be bad news even in full daylight, this is the time of year when rattlesnakes will hunt predominantly after dark. A little counsel from us sends them scurrying back up the trail. It's no wonder that so many people either die or require rescue in the wilderness; any deficit in planning and/or caution can spell disaster, especially in a region as rugged, isolated, and unforgiving as this.

As evening descends on the canyon, I spend an hour or so on an aimless ramble along Redbud Creek. It is in the hours just before darkness that the canyon country really returns to life. The frogs begin their incessant croaking, the birds resume their songs, and the creek, slowed noticeably by evaporation in midday, rolls along at an accelerated pace. The patterns of light and shadow accentuate details missed in the noonday glare, and in the cooler air of evening, with no distance to achieve and no load to carry, walking alone becomes pure pleasure. I know that a small

Anasazi granary, observed by the Bernheimer party in 1922, is supposed to be around here somewhere, so I make locating it my goal. I never do find it, in spite of staring intently at every ledge, but this in no wise diminishes my evening's pleasure. As twilight progresses toward darkness I make my way back to camp and find a comfortable spot to watch the first stars appear in the slit of sky above us. The show promises to be spectacular, but after a brief respite I decide to turn in early. Tomorrow will be a very busy and taxing day.

Forbidding Canyon (also known as Forbidden Canyon in some articles, books, and maps) fascinated me ever since I first started looking at the topographic maps in preparation for this trip. In the days before flooding, Bridge Canyon was actually a tributary of Forbidding Canyon, and so adventurers wishing to visit Rainbow Bridge from the Colorado River actually hiked up the lower four and one-half miles of this canyon before turning left into Bridge Canyon, eventually reaching Rainbow about one and one-half miles beyond. Of course, the walk is no longer possible, but it would seem to be a simple matter to enter this drainage much further up just by walking down Cliff Canyon below its junction with Redbud Pass. From there we can explore down canyon toward the reservoir or up canyon toward Navajo Mountain. My interest in this place is heightened by the fact that, while I have talked with a number of people who have done the hike to Rainbow Bridge, I know only one person who has hiked in Forbidding Canyon. I have also never seen any pictures of it. Thinking that his would be a good place to visit, we break camp early and head back up Redbud Creek. The climb over Redbud Pass is no less strenuous from this direction, but the cool morning air makes it less fatiguing. In fairly short order we are back in Cliff Canyon at the pictograph panel. The plan is to walk down this canyon until it joins Forbidding Canyon, and then to walk downstream as far as possible.

I know that the first part of this trek should be possible because Bernheimer writes about it in his book. In 1921 he tried to come straight down Forbidding Canyon from the mesa top in an attempt to reach Bridge Canyon and, hence, Rainbow Bridge from the west. The 1921 expedition failed because the route proved to be impassable to Bernheimer's pack train. The next year he was back, and this time he went over the west flank of Navajo Mountain and down into Cliff Canyon. He hoped that this canyon would somehow provide a route down to Bridge Canyon, but in this he was disappointed. From his camp at First Water he quickly realized that Cliff Canyon was leading him right back into Forbidding Canyon, but at least he was much closer to the bridge than he had been the previous year. However, further investigation showed that even down this far the character of Forbidding Canyon had not changed. Drop-offs and slots so characteristic of this canyon continued to impede his pack animals, so another route would have to be found. It was at this point that Bernheimer stumbled upon Redbud Pass, which he was able to blast into submission, and the route to the bridge from the west was now open.

The walk down Cliff Canyon is only a mile or so, and by mid-morning we are standing in Aztec Creek, the waterway which flows down Forbidding Canyon. (The creek was named for a group of mysterious structures at the mouth of the canyon, which early prospectors mistakenly attributed to the ancient Aztecs.) Aztec Creek flows due north right along the east face of Cummings Mesa. This mesa rises straight from the creek bed in an unbroken block of sandstone to an elevation of over six thousand feet. Hence, Aztec Creek is really hemmed in, which may account in part for its extremely rugged and difficult course. A short way down-canyon a narrow tributary enters on the right about six feet off the canyon floor. Walter, being lithe and very agile, is able to scramble up and into the mouth and follows it back for a ways. He reports a narrow, twisting canyon eventually blocked by chokestones and deep pools. A bit further on we find the canyon floor swept clean of all debris, so we are now hiking on solid rock. The stream cuts deeply into this pavement, thereby forming a conduit only a foot or so wide. This soon opens up into a deep pool, and here the canyon is a V shape (plate 7). There is scarcely any room to walk and the pool looks too deep to wade. It is easy to see why Bernheimer thought this an unlikely route for his animals, but again the scenery is incredible. In fact, this may be one of the most beautiful canyons I have ever seen. The sheer rock walls tower hundreds of feet above us, their sinuous forms reflected perfectly in the clear water. The smooth sweep of sandstone offers not the slightest niche in which plants might gain a foothold, so there is nothing here but water, stone, sky—the canyon country reduced to its most basic elements. There is more to come. Two bends down, the little stream spills over a fifteen-foot fall directly into a dark pool ringed

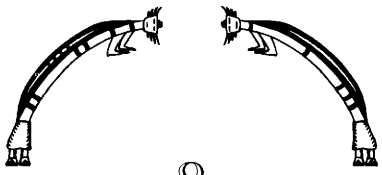
by sand. We work around this by climbing a bench on the left and eventually ledge-hopping down to the stream bed a short distance below the fall. The plunge pool is enclosed in a semicircular chamber, whose walls host the silvery patterns of reflected sunlight off the water's surface. Behind us the stream makes a sharp bend to the left, creating a huge overhang draped with a tapestry of desert varnish. The beauty of this place is almost too much to contemplate, the range from delicate to imposing nearly more than the mind can grasp.

We continue to move downstream, new wonders revealing themselves at every turn. Eventually the stream slides into a steep notch and drops about eight feet. With no bench on either side we cannot go further, so we find a comfortable spot and eat our lunch. The walk back is bittersweet. It gives us a second view of the canyon's marvels, but there is sadness in leaving so much magnificence behind. It is not yet mid-afternoon when we reach the mouth of Cliff Canyon, so we decide to hike up Aztec Creek a bit further before heading for camp. The upper canyon is equally spectacular and rugged. Deep azure pools, caves, and alcoves interspersed with sheer walls continually force us up and down benches, some as much as a hundred feet above the stream. The afternoon is blistering hot, and the work involved in scrambling over the talus is beginning to expend too much energy. Reluctantly, we turn back toward camp.

We have barely turned into Cliff Canyon when the speed at which physical limits can be reached becomes painfully obvious. Walter is now showing signs of the early stages of heat exhaustion, even though his intake of water has been more than adequate. Fortunately most of the canyon is now in shade and it is easy to find a cool spot by the stream where we can both rest and cool down. I feel very fortunate that we quit when we did, as the effects of too much exertion in hot weather can be fatal.

We make camp late in the afternoon at First Water, thereby following the pattern set by the hundreds of hikers who have come before us. It is indeed a pretty place, with shade, adequate water, and good campsites. There is more sky here than we were able to see during our previous two nights, and in the pitch black of night the curtain of stars over us renders the sky nearly luminescent. Between visits to the canyon country it is easy to forget how many stars there are and how pale is the night sky above my city home by comparison. I drift rapidly off into a deep sleep, but Walter is not so fortunate. He spends a good portion of the night throwing rocks at some rather large furry creatures which have a more than casual interest in our packs. I somehow have a feeling that Walter's memories of this trip will have a distinctly less-than-pleasant aura.

I scarcely remember the hike out. We start early so as to get the hard climb toward Yabut Pass over before the heat begins to set in. The morning is cloudy, however, so there is not much to worry about on that score. I do remember the humor in a large very green lizard doing push-ups on a rock high up Navajo Mountain and the sweetness of contemplating the Rainbow Plateau one last time before turning down Horse Canyon toward the road home. It is a trip whose memories have remained vivid and fresh as the years have passed. The Rainbow Bridge country is indeed special beyond measure.



2

The Story in the Rocks

How Rainbow Bridge Came to Be

At the dawn of the Triassic period, approximately 225 million years ago,* the region we know as the Colorado Plateau was markedly different in appearance from the way we see it today. The vast oceans, which covered the whole region during the middle Permian era, had finally retreated off to the south and west, and so most of what is today southern Utah and northern Arizona was at last above the sea level. For the next 50 million years the region would remain as part of a large prehistoric continent, receiving in this period the rich and colorful sandstones and shales in red, orange, white, and pink which have made this the most scenic area in the world.[1] To the northeast stood the highlands of the ancestral Rocky Mountains, which looked down upon a vast low plain laced with a network of slow-moving streams, sloughs, floodplains, and tidal flats. The climate was warm and humid, and, as the great collections of petrified wood scattered about the area show, the region was covered in ferns, cycadeoids, and conifers. Crawling, swimming, and floating around in this wet and muddy environment were freshwater bivalves, snails, ostracods, fish, amphibians, and reptiles.[2] The thickness of the formation laid down in the early Triassic shows that the water carrying the silt and mud was generally flowing from the east toward the west and southwest, originating in the regions around what we know today as Durango and Grand Junction in Colorado and the Uinta Basin of northeastern Utah.

The first formation to be laid down in this new continental environment is a chocolate to reddish-brown mudstone known as the Moenkopi Formation. As a rock it still very much resembles the mud from which it originated. In places one can see the mud cracks which formed as it began to dry, the pits left by falling raindrops, and the ripple marks etched by the movement of shallow water over and around it.[3] It is named for a particularly fine outcrop close to a Hopi village near Tuba City, Arizona, but it is nicely visible along Highway 89 at the base of the Echo Cliffs and between Page, Arizona, and Kanab, Utah, where it outcrops at about the same elevation as the highway. In the Glen Canyon country the formation is about three to four hundred feet thick.[4]

The relatively peaceful, almost languid, character of the early Triassic period was not to last. Perhaps because of increased upward pressures on the Uncompahgre Uplift to the east and the Mogollon Rim to the south, the character of the streams flowing across the Moenkopi Plain began to change. The tilt of the land caused the velocity of the streams to increase, gouging washes more than a hundred feet deep into the soft mud, and, instead of carrying finely

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* The geologic era in which the rock layers making up the Colorado Plateau were formed is still a matter of uncertainty and debate. To illustrate, in his 1983 work *The Colorado Plateau: A Geologic History*, Donald L. Baars dates the whole of the Glen Canyon Group and associated formations to the Triassic period. In his 1995 treatise *Navajo Country* he assigns these same formations to the Jurassic period. The main problem is that rock layers are dated by fossils, and the Glen Canyon rocks contain few fossils. In this discussion the 1983 Baars assignment is the one used.

grained silt and sand, these streams began to bring down gravels and other coarse deposits. Filling the gullies and spreading their rocky burden all across the mud flats, the flowing water laid down in short order a thin but very hard layer known today as the Shinarump Conglomerate. Ranging from 30 to over 150 feet thick, this cement-like rock forms an erosion-resistant cap on the Moenkopi, and its grey to brownish-black outcrop shows up all over the Colorado Plateau, capping many mesas and buttes, particularly in Monument Valley and along the middle San Juan River.

The Shinarump Conglomerate is topped by a huge mass of variegated shale known as the Chinle Formation. Never quite congealing into solid rock, the Chinle is instead a soft, easily eroded, brilliantly colored slope-former laid down in a series of shallow freshwater lakes or very slow-moving streams.[5] This shale erodes easily into a sterile clay whose total lack of plant cover leaves its bands of spectacular colors exposed and instantly recognizable all over the Colorado Plateau. Deposited during a period of relative geologic tranquility, the sheer mass of the Chinle beds, nearly one thousand feet thick in some locales, is testimony to the nearly flat landscape which must have existed here during the middle and late Triassic era. These formations come in all shades of grey, purple, green, and brown, and are most easily seen along Interstate 40 from Winslow to Holbrook in northern Arizona.[6]

The early and middle Triassic period was characterized by a climate far more often wet than dry, but by the late Triassic all this began to change. The transition is first visible in the upper layers of the Chinle, where bands of sandstone begin to intrude into the shale. This change did not occur suddenly, but when it came the shift was total and dramatic. Perhaps due to the eventual wearing down of the ancestral Rockies and the continued out-migration of the seashore, the winds crossing this onetime lush and well-watered basin became hot and dry. Instead of sending meandering streams across the Chinle plain, the eastern uplands now contributed only sand, nearly homogeneous in nature and composed of medium- to fine-grained quartz.[7] In a fairly short period of geological time the western two-thirds of the Colorado Plateau was buried in drifting sands hundreds of feet thick. Donald Baars states that in both climate and appearance the region was "very comparable to the present-day Sahara."[8] This formation is today known as the Wingate Sandstone, a cliff-former visible in a dark red vertical band over most of the plateau country. It is the reason for the Vermillion Cliffs north of the Grand Canyon and the Orange Cliffs overlooking the Maze in Canyonlands.[9] It is a nearly uniform three hundred feet thick, and owes its red color to the presence of a thin film of iron oxide which coats each grain of sand. The grains are held together firmly by calcium carbonate. This firm binding means that the sandstone tends to break off in great columnar chunks, thereby littering the underlying Chinle beds with huge blocks of reddish-black detritus. The Wingate is nearly devoid of fossils, but H. D. Miser in 1923 reported seeing dinosaur tracks in the lower beds.[10]

For some reason, seemingly difficult to explain, the climate of the region soon shifted back once again to a wetter regimen. The great Wingate dunes were flooded by sheets of slow-moving shallow freshwater flowing from the east and northeast uplands, leveling the dunes and beginning the deposition of an irregularly bedded fine- to coarse-grained sandstone known as the Kayenta Formation. Compared to the other Triassic formations it is a relatively thin layer, ranging from 140 to 225 feet thick in the Glen Canyon region, meaning that this wet interval must have been of short duration. The Kayenta is actually laid down in thin layers which are not continuous and are very irregularly placed, much as one would expect in a slow-moving stream. The rock is brittle and, especially in the lower layers overlying the Wingate, particularly resistant to erosion. The sandstone becomes softer as the deposit gets younger, thereby eroding in a slope back from the lip of the Wingate cliffs and forming a bench up to several miles wide. Both dinosaur bones and tracks occur frequently in the Kayenta,[11] as well as the fossil remains of a river-dwelling reptile which closely resembles the modern crocodile.[12]

The hot winds and dry conditions of late Triassic time would not be held at bay for long, however, and when they returned they came with a vengeance. By now almost all of what is today North America was above sea level and the ancestral Rockies were but a shadow of their former selves. Once again sand rippled over the landscape, deepening as it moved west. This sand was of medium-sized quartz grains, ranging in color from white to light grey or tan, and it rolled across the Kayenta flats in great billowing waves, piling dune upon dune in a seemingly endless procession of blazing white intensity. These great oceans of sand are visible today as the Navajo Sandstone, the

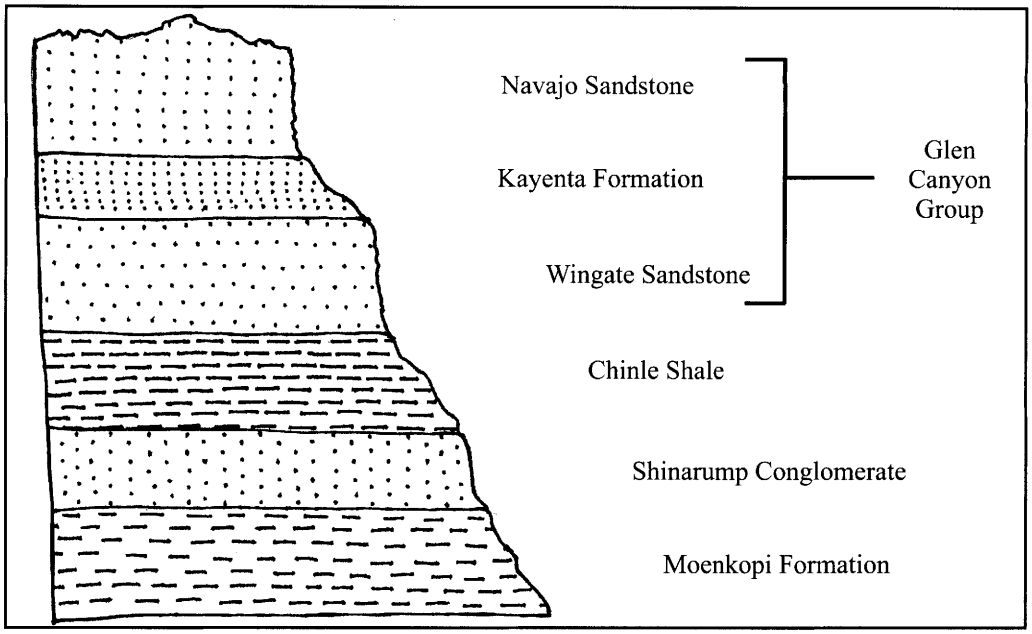


Figure 3: Stratigraphic diagram of the Triassic formations in Rainbow Bridge country

crowning glory of the Triassic period and the scenic wonder of North America. In 1923 Arthur H. Baker of the United States Geological Survey wrote, "The canyons and domes resulting from the dissection of this sandstone when seen from the top of Navajo Mountain create the impression of a billowy barren waste and yet one of remarkable scenic grandeur."[13] The Navajo is only loosely cemented with calcium carbonate, making the rock highly erosive. Hence, when cut by a stream or ravine the resulting canyon tends to be deep and narrow. Glen Canyon, Escalante, Paria-Hackberry, Capitol Reef, and Zion are all Navajo Sandstone features, and today nearly the entire exposed portion of this formation is within the boundaries of some national park or monument. This is the formation which bequeathed to us Rainbow Bridge, and here on the north slope of Navajo Mountain it is 1,100 feet thick.

The Triassic period came to a close 180 million years ago with this great sand formation in its ascendancy, and with it ends the depositional record of fundamental importance to the Rainbow Bridge story. The building blocks of the Colorado Plateau were certainly not all in place, however, not by any means. The great oceans were to return to the region twice more, sending water seeping down through the Glen Canyon Group (as the Navajo, Kayenta, and Wingate Formations are known), providing the minerals which eventually bound the grains of sand together and the weight which compressed this sand into rock. Four great depositional ages, the Jurassic, Cretaceous, Tertiary, and Quaternary, remained, each adding its own layers of sediment and sand to the plateau's geologic history. The Jurassic contributed the Entrada Formation, which eventually gave us the spectacular collection of windows in Arches National Park; the Cretaceous laid down the multiple layers forming the Kaiparowits Plateau, the heart of the Grand Staircase-Escalante National Monument; Tertiary time brought us the beautiful pink cliffs of the Wasatch Formation in Bryce Canyon National Park and Cedar Breaks National Monument. In the Glen Canyon-Rainbow Bridge country, however, these younger layers have been largely carried off, washed away during the last few million years by the streams and rivers flowing from the high mountain ranges of southwestern Colorado and the isolated peaks of southern Utah. They are visible here only in isolated locations, such as the Kaiparowits Plateau and the upper elevations of Navajo Mountain.

The story in the rocks takes up again about 70 million years ago with the dawn of the Tertiary period. The great Cretaceous oceans were retreating off to the south and west to near their present locations, pushed there by a gradual rise in elevation of the continental areas. The energy forcing this change came from a great pool of molten rock (magma) deep within the earth's crust. As the magma pushed upward, the

Figure 4: Glen Canyon near Hole-In-The-Rock, 1955. Here all the formations of the Glen Canyon group can be clearly seen. The Wingate Sandstone appears at river level surmounted by the ledgy Kayenta formation which forms the broad bench shown on the left side of the photograph. Above these tower the cliffs and domes of the Navajo Sandstone.

sedimentary rocks of the western United States began to fold and buckle. Every fault line, every joint, every thrust belt was moving to a degree unprecedented since before life emerged on earth.[14] It was during this time that the significant topographic features of the Colorado Plateau emerged and matured. Geologists refer to these periods of significant feature-building as "orogenies," and this one is called the Laramide Orogeny. It actually began in the late Cretaceous along the west coast of North America and gradually moved eastward, reaching the Colorado Plateau early in Tertiary time.

Wherever and whenever the crustal fractures allowed, the magma poured forth onto the surface in a chain of fiery volcanic eruptions. While not directly affecting the Glen Canyon-Rainbow Bridge area, this explosive chain virtually encircled it, pouring molten rock over thousands of square miles of Cretaceous and Tertiary sediments. The spectacle of these pyroclastic displays must have been astounding. During the day one would have seen great clouds of steam and gas rising in every direction, with plumes of ash trailing the prevailing winds. At night the horizon would glow with the lights of a thousand fissures and cinder cones discharging rivers of slow-moving, black-sheathed magma. Earthquakes would have been frequent, as the eons of depositional history sought to accommodate themselves to the new crustal realities. To the east the San Juan Mountain country around Durango and Silverton was ablaze with this surrealistic fire. To the north and west the whole of Utah from Richfield and Marysvale south to St. George and east nearly to Bryce Canyon and Capitol Reef was submerged under tons of the rolling black lava. Along Highway 89 just south of Panguitch, Utah, at the mouth of Red Canyon, one can observe how a dark tongue of molten rock poured off the Adams Head-Casto Bluff upland and over

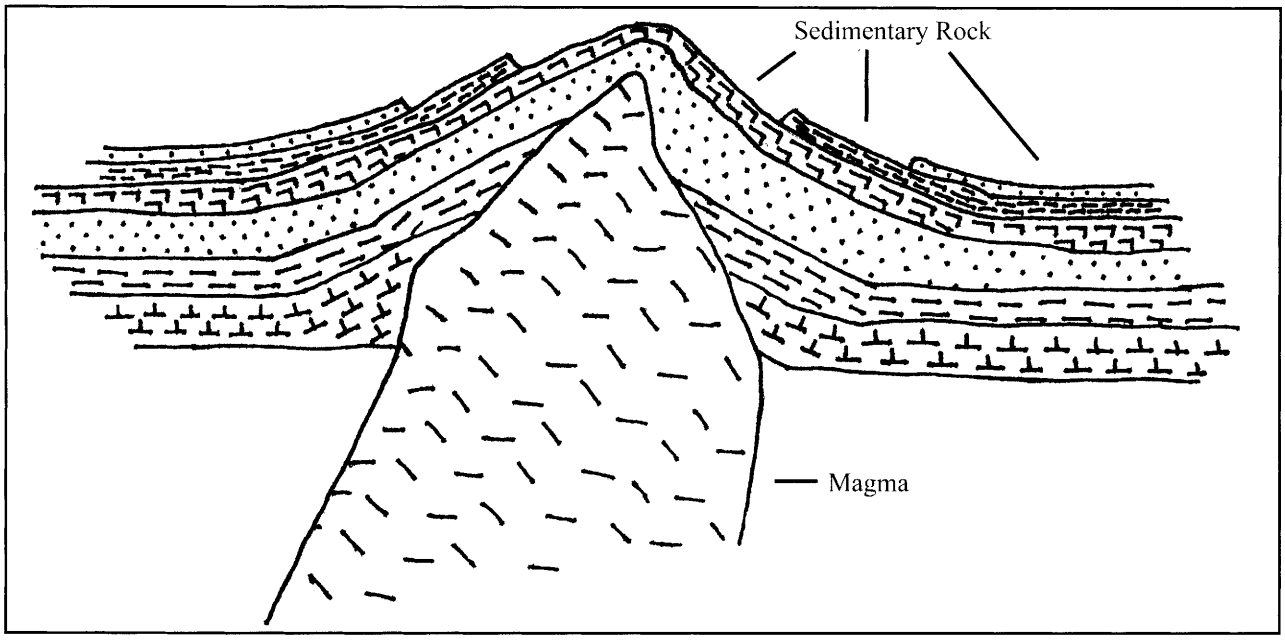


Figure 5: How a lacolithic mountain is formed. Magma from deep within the earth's crust pushes its way toward the surface, bending the overlying sediments into the shape of an inverted bowl. Near the peak of the mountain the sedimentary rock will often be badly fractured, eroding away and leaving the ower sediments standing on edge.

the pink limestone of the Wasatch Formation, halting just as it reached the lowlands along today's Sevier River. To the south the ancient volcanic plugs called Shiprock Peak in New Mexico and Agathla Peak near Kayenta, Arizona, testify that the Tertiary violence reached even to this peaceful land. Their graceful cones of ash and cinder have long since blown and washed away, leaving only the stark interior masses of basalt pointing skyward to remind of a time when fire ruled the earth and death came wrapped in sulfurous fumes, grey ash, and rivers of orange-red rock. The high plateaus of Utah—Boulder Mountain, the Fish Lake Mountains, the Sevier Plateau—stand nearly ten thousand feet in the air, capped with a flat pavement of black lava which poured down when their now densely forested slopes were practically at sea level. The Tertiary period lasted about 70 million years, and Baars estimates that this volcanic revolution lasted for about the first half of that epoch.[15]

While this pyrotechnic display was going on, the great reservoir of interior magma continued to push the whole of this region skyward, resulting in the Colorado Plateau being lifted to elevations of four to six thousand feet, approximately where we find it today. Where block faulting was present, isolated rectangles of territory were pushed even higher, creating the plateaus today called the Wasatch, Markagunt, Paunsaugunt, Aquarius, and Thousand Lake. These uplands look down upon the red rock country and yield views which Clarence Dutton, a geologist for the Powell survey, said "should be described in blank verse and illustrated upon canvas."[16] Once so elevated, the period of deposition on the plateau ended and erosion began. Excess strata, which in the Rainbow Bridge country meant almost the whole of the Tertiary, Cretaceous, and Jurassic deposits, were attacked and washed away with a vengeance.[17] By late Tertiary time most of the drainage systems of the plateau, including the ancestral Colorado River, were in the locations where we find them today, and as the land lifted and curved great masses of rock were carried away toward the south and west. The Navajo Sandstone was at last back on the surface, to be weathered, shaped, and sliced with true geologic artistry.

The volcanic forces which molded, elevated, and fractured the country of southern Utah and its environs also managed to produce features which are quite localized, spectacular, and unusual. As specialized units of magma pushed upward, the great pressures they created usually resulted in cracks, fissures, and explosive volcanic eruptions—but not always. At isolated locations around the Colorado Plateau the progress of the magma up through the overlying strata was slow enough and the magma cool enough to have

the consistency of malleable plastic. As this magma coursed upward through the rock, it blistered the strata rather than fracturing it, creating huge domes of sedimentary rock. As various layers of strata were reached the magma sometimes pushed into the joints, creating new fingers and multiple domes at a single location. If the pressures were great enough and if the magma made sufficient progress through the rock, it could intrude near to the surface, erosion eventually creating sharp and jagged peaks of diorite, which dominate the landscape for miles around. These mountains tend to be isolated, geologically unrelated to any nearby range, and separate from the fracture zones which produced the volcanoes that ringed the Colorado Plateau. As John Wesley Powell and his party floated down the rivers, they could see these solitary peaks rising high above the canyon rims, but they had no way to divine their origin. It remained for later expeditions of geologists to unravel the unique nature of these formations, which were scattered randomly over the heart of the country.

The definitive work on this subject was produced by the geologist Grove Karl Gilbert, who surveyed first with George M. Wheeler and the Army Corps of Engineers from 1871 until joining the Powell Survey on September 30, 1874.[18] Academically trained in Greek and mathematics, Gilbert learned his geology under J. S. Newberry on the geological survey of Ohio and later through contacts with Edward Orton and R. D. Irving.[19] In 1875 and 1876 he did a reconnaissance and survey of the Henry Mountains, then as now one of the most isolated and forbidding spots in the whole Colorado Plateau. During the 1876 expedition he spent two months in the area, climbing the peaks and examining the strata, and what he saw both puzzled and amazed him. The peaks themselves were clearly of volcanic origin, but there was no evidence of an eruption, no lava flows, no cinder cones, and no explosive debris. The sedimentary strata seemed to have been curved upward into a gigantic bubble, in some cases displaced thousands of feet above the surrounding plain. The layers near the peaks had clearly been badly fractured and then eroded away, leaving the core of diorite exposed and the sedimentary rock turned on edge further down the slopes. Gilbert coined the term "laccolith" (or laccolite) for this formation by fusing two Greek words, *lakkos* (cistern) and *lithos* (stone).[20] He recognized that his colleagues, Newberry, Peale, and Holmes, had observed the same phenomena at the LaSal and Abajo Mountains on the other side of the Colorado, but these gentlemen had been content to simply record their observations and had offered no explanation.

Gilbert explained why some magma intrusions produced volcanoes, while others produced laccoliths:

> When lavas forced upward from lower-lying reservoirs reach the zone in which there is the least hydrostatic resistance to their accumulation, they cease to rise. If this zone is at the top of the earth's crust they build volcanoes; if it is beneath, they build laccolites. Light lavas are more apt to produce volcanoes; heavy, laccolites. The porphyritic trachytes of the Plateau Province produce laccolites.[21]

If all this has seemingly taken the story of Rainbow Bridge a bit far afield, the backward connection is immediately made by looking closely at Gilbert's work once again. Standing on the high slopes of the Henrys, this insightful and intuitive geologist could see the great rounded dome of Navajo Mountain far to the south and recognized that this, too, must be a formation of the same type.[22] While no geologist had at that time climbed it to confirm Gilbert's thesis, he was quite convinced that Navajo was the exact counterpart of Mount Ellsworth. His conjecture was confirmed by a governmental scientific expedition in 1933 which spent several days of fieldwork on Navajo Mountain and reported, "Evidence is conclusive that the mountain is one of the most striking laccoliths in existence."[23]

The accompanying stratigraphic diagram of Navajo Mountain, drawn in 1924, illustrates a number of striking features of this peak. First, the displacement of the horizontal strata by the upward thrust of the laccolith is extraordinary—about 3,000 feet. For example, the base of the Navajo Sandstone at Rainbow Bridge is at an elevation of 3,700 feet; on Navajo Mountain this same formation is at nearly 7,000 feet. Second, the magma which created the dome is nowhere near the surface, having barely penetrated the middle Permian rocks of the Cutler Formation (which, in the Rainbow Bridge country, are well below sea level). Third, the uplift itself is extremely localized, the strata being disturbed at a distance of only about five miles from the axis of the peak.[24] Finally, Navajo Mountain seems to be the product of a single finger of magma. While the Henry Mountains are clearly formed by multiple fingers of igneous rock, thereby creating several peaks over the same basic lava pool, Navajo Mountain shows no sign

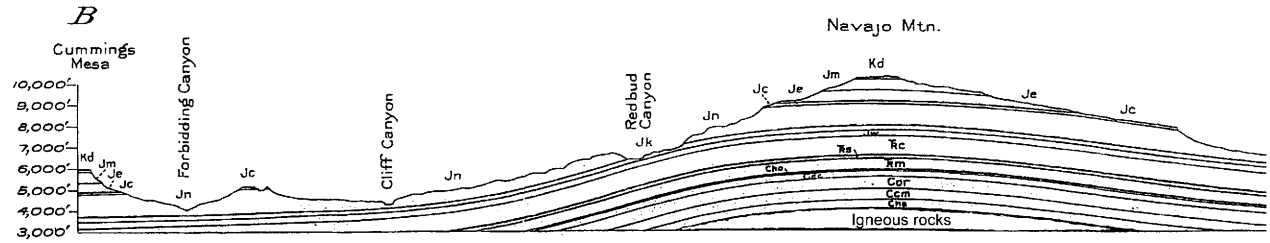


Figure 6: Stratigraphic diagram of Navajo Mountain and the Rainbow Bridge region. (Taken from plate 1, U.S.G.S. Bulletin 865, *Geology of the Monument Valley – Navajo Mountain Region, San Juan County, Utah.*) Key to the Stratigraphy:

Kd = Dakota Sandstone
Jn = Navajo Sandstone
Trs = Shinarump Conglomerate
Jm = Morrison Formation
Jk = Kayenta Formation
Trm = Moenkopi Formation
Je = Entrada Sandstone
Jw = Wingate Sandstone
Cor-Com-Che = Cutler Formation
Jc = Carmel Formation
Trc = Chinle Formation

of any such subterranean complexity. This has enabled it to keep its original dome shape, which it exhibits from almost any viewing location. In fact, as the stratigraphic diagram clearly illustrates, Navajo Mountain is made up exclusively of sedimentary rock, with no igneous rock protruding through to the surface. This makes Navajo Mountain a "capped laccolith," the only such peak in the Four Corners region.

The cap on Navajo Mountain is the light-colored Dakota Sandstone, a Cretaceous formation laid down about 70 million years ago. Thus, it would seem to be clear that no laccolithic intrusion was evident in the Rainbow Bridge country until all of the Cretaceous, and, perhaps, the Tertiary, strata had been laid down. Hence, possibly as late as 50 million years ago this area was a broad plain, nearly level, with perhaps a slight slope angling west toward the ancestral Colorado. The current surface was overlain by as much as a thousand feet of additional rock, possibly as high at one time as the Kaiparowits Plateau directly across the Colorado River from Rainbow Bridge.[25] As the Laramide Orogeny pushed this region steadily upward, precipitation in the form of violent thunderstorms increased, and little by little the soft unconsolidated sediments of the Jurassic and Cretaceous periods were, in large measure, washed away. It is certainly easy to stand today at the foot of the Kaiparowits Plateau or Mesa Verde and imagine the dark Tropic Shale and the grey Morrison Formation washing away very easily. While they were disintegrating, the harder Entrada Sandstone and Straight Cliffs Sandstone would have broken off into blocks of various sizes where the rain, frost, and wind would have made short work of them.

Because the Laramide upthrust was nearly uniform all across the Colorado Plateau the change in elevation did little to affect the region's general topography, and so even as the Cretaceous and Jurassic strata were disappearing, the plains and valleys of the landscape they created remained essentially unchanged. Primeval Bridge Creek undoubtedly flowed down one such valley, angling from side to side across the plain in great oxbow loops, following the path of least resistance as it made its way toward the ancestral Colorado.[26] Similar patterns of stream flow can be seen today all over the West. One fine example is the Sevier River as it flows north between Long Valley Junction and Panguitch in Kane and Garfield Counties, Utah. Here it is possible to observe a clear, slow-moving stream angling across a broad valley through many of the same formations that ancient Bridge Creek encountered millions of years ago. Figure 7 shows how that might have looked in the vicinity of today's Rainbow Bridge.

Two factors contributed to dramatically change this pastoral scene. First, the soft, unconsolidated Jurassic and Cretaceous sediments were largely removed, exposing the hard, underlying Triassic formations, particularly the Navajo Sandstone, at the surface. While the loose, yielding formations tend to form broad valleys, even in the presence of a flowing stream, the Navajo Sandstone behaves in a completely different fashion. Flowing water here would have created a canyon, and the canyon structure would have been incised rather quickly. The broad, meandering oxbow loops of the valley stream, which had been quite free to migrate or even disappear completely in the softer sediments, were now locked in by the sandstone—

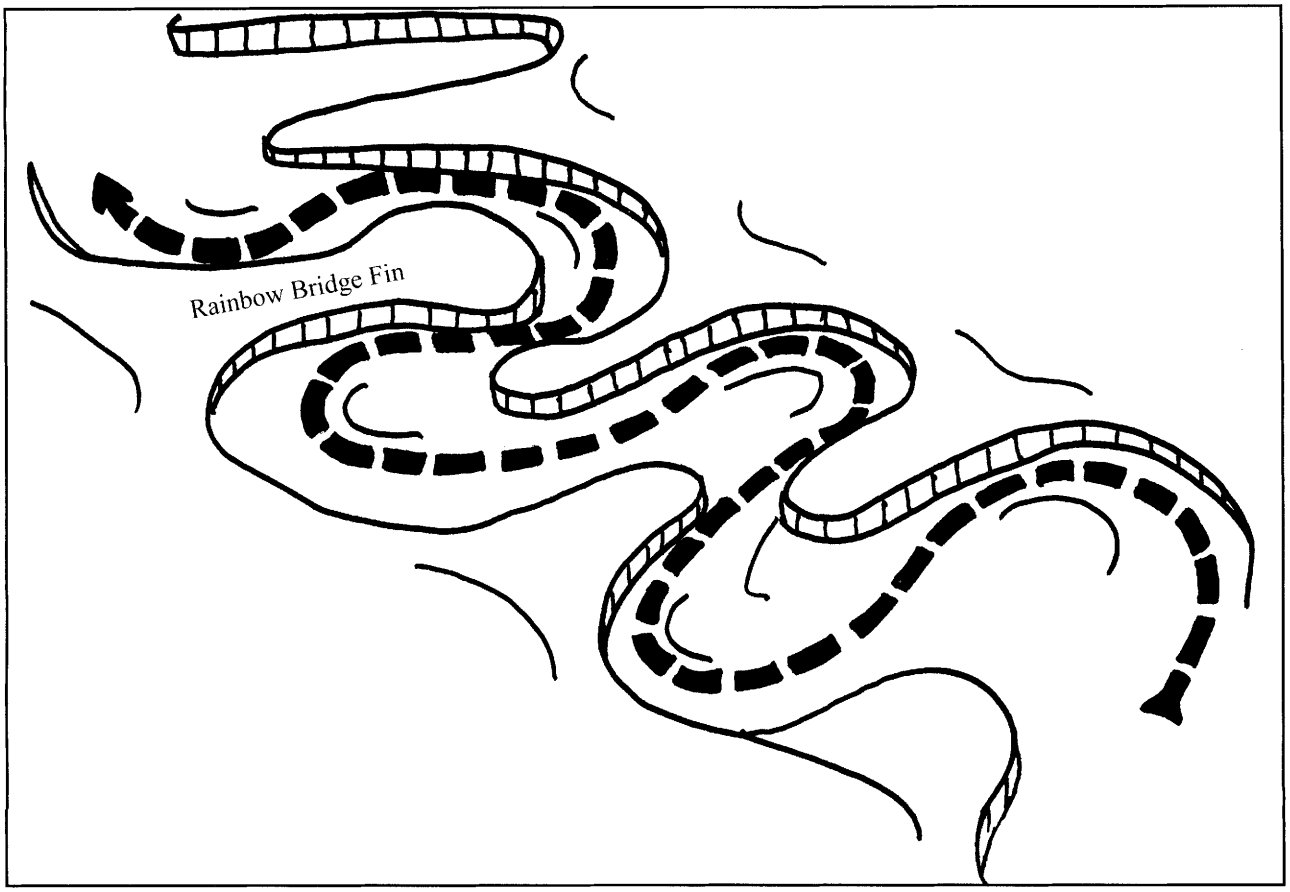


Figure 7: Primeval Bridge Creek created its oxbow loops while meandering lazily over a broad Cretaceous plain. Once the harder formations were reached, however, the meanders became entrenched, the creek being forced to loop back on itself by fins of Navajo Sandstone.

they had become entrenched. As what was left of the overlying shales and siltstones was washed by the rains into Bridge Creek, the water used particles as abrasives to scour the channel even deeper. As long as the surrounding country remained relatively flat, however, the stream would have retained its somewhat low velocity and canyon building would have proceeded slowly. In fact, today it is possible to see the location of a relatively stable ancient stream bed about 140 feet above the present location of Bridge Creek. This cobbled watercourse enters the Colorado River at the mouth of Aztec Creek about 550 feet above the modern river level, indicating that the stream flowed here when the youthful Colorado and San Juan River canyons were 400 feet shallower than they are today. There are indications, too, that during that time the Colorado was a much larger river than what we see now, these high flow levels probably occurring during an interglacial period.[27]

Second, even as the general uplift of the whole Colorado Plateau was proceeding more or less uniformly, the laccolithic bubble which was to become Navajo Mountain was building about six miles to the southeast. This blister of sedimentary rock first of all tilted the plateau immediately upstream from today's Rainbow Bridge National Monument. This increased the velocity of Bridge Creek, causing it to cut into the Navajo Sandstone at an accelerated pace. These elevated headlands also contributed an increased amount of sediment in Bridge Creek, which the water could then use to peel away at the rock with even more efficiency. The presence of Navajo Mountain so close to the Colorado River accomplished something of even greater importance, however—it increased dramatically the amount of water flowing into Bridge Creek. Most authorities recognize that during the time Bridge Creek was cutting its present channel deep into the sandstone, the climate of the region

was "prevailingly arid."[28] Hence, left on its own Bridge Creek would never have formed Rainbow Bridge; its small natural flow would simply not have had the sculpting power necessary for such a gigantic enterprise. Navajo Mountain, however, caught the prevailing westerly winds. This caused them to rise, cooling the air and forcing it to drop whatever moisture these winds might contain. Its steep, rocky slopes would then send most of the moisture cascading down into the canyons, often at high velocity and loaded with jagged bits of sand, silt, and good-sized rocks. In winter the mountain would be sheathed with significant amounts of snow, which would melt into the creeks and provide a reliable flow from early spring well into summer. One can observe this exact pattern going on today. In mid and late summer the peak of Navajo Mountain is often ringed with clouds, which spawn monsoon-like thunderstorms all over the Rainbow Plateau. In winter its slopes are observed to be white with snow even though the surrounding canyon country is brown and arid. The power of Navajo Mountain to augment the naturally occurring erosive forces of the plateau is beautifully illustrated by figure 8, which shows from the air the slickrock maze that is the legacy of Navajo Mountain. Perhaps nowhere else on the whole Colorado Plateau has the rock been cut with more artistry or dramatic intensity. Surely Rainbow Bridge is as much the child of Navajo Mountain as are Forbidding Canyon, Bridge Creek, Oak, Mystery, and the whole panoply of drainages extending from here into the Colorado and San Juan Rivers. Armed with the water and grit flowing off the eastern and southern uplands, Bridge Creek now left behind its placid early history and began to carve its way quickly into the relatively soft pink sandstone.

The meanders of Bridge Creek, formed when it was a placid valley stream, have been firmly entrenched ever since the erosive process reached the Navajo Sandstone, so the canyon being cut looped back on itself numerous times in great goosenecks, perhaps taking several miles to progress a single mile toward the Colorado River. As these loops hit the canyon wall at an apex the stream would carve out large overhanging cave-like structures called alcoves. At least four such alcoves can be observed on the northeast canyon wall of Bridge Creek at Rainbow Bridge, showing that the stream once made many tight loops at this location. Figure 9 shows these loops superimposed over the modern flow of Bridge Creek at the site of Rainbow Bridge.

The tendency of any stream with several entrenched and now useless meanders is to straighten itself out by eroding away the fins of rock which are forcing it into such an illogical course. It does this by attacking each fin at the apex, thereby shortening it, and along each side, thereby narrowing it. As the swift, silt-laden waters of Bridge Creek slammed into each fin, particles of sand would be removed at the waterline. Along the sides in particular this would undercut the wall, leaving hundreds of feet of sandstone overhanging the stream. This unstable situation would periodically be rectified by great slabs of rock falling off the fin and into the stream. This process the geologists call "exfoliation," and such is a characteristic of the Navajo Sandstone.[29] The Navajo is so homogeneous that such slabs can be hundreds of feet high and cut across all sorts of joints and bedding patterns. These slabs often have an arch shape, particularly at the top, reminiscent of the days when the sandstone was a great dome-shaped dune. This can be observed very nicely at a place called Red Arch just up the Virgin River from the lodge in Zion National Park. This formation, not really an arch at all but rather a great conchoidal fracture in a sheer Navajo Sandstone wall, was created in the late 1880s when a massive rock fall buried the cornfield of Mormon settler Isaac Behunin. The result is a recess in the rock face bearing a distinctive arch shape; hence its name.

Some fins are thick at the back and narrow at the apex, and in this case erosion will tend to shorten them faster than they are narrowed. In such cases the fin will largely disappear, perhaps only a remnant remaining at the back to push against the stream and give it a very shallow bend. For other fins the apex is wide and blunt, meaning that narrowing proceeds much faster than shortening. In such a case the stream will simply eat through the fin, leaving a pillar of sandstone on the right bank to be worn away by wind and rain while the stream forms a new channel to the left. The old oxbow channel, now abandoned, is called a rincon. At Rainbow Bridge National Monument both types of fin erosion can be observed. The first alcove upstream from the bridge contains a short sandstone pillar, the only remnant of a huge fin which was eaten through and abandoned. At the second alcove upstream from the bridge the fin has simply disappeared without a trace.

The fin which was destined to form Rainbow Bridge began life with a very thick, blunt apex and a

Figure 8: Rainbow Bridge country from the air, 1953. Here the slickrock jungle is at its most artistic and profound. Aztec Creek joins the Colorado River at the lower right. Rainbow Bridge (not shown) is located in the center of the picture at the foot of a small, flat-topped mesa.

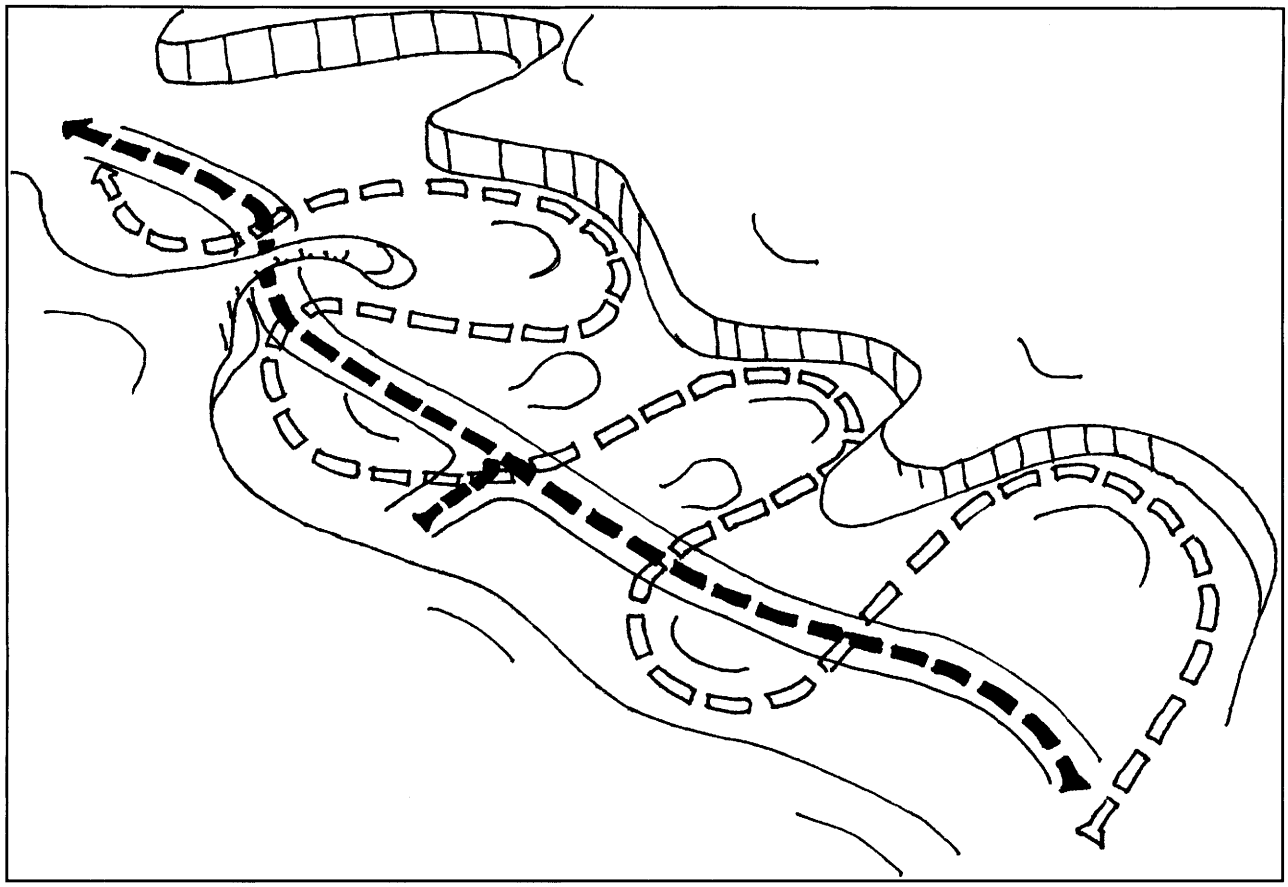


Figure 9: Modern Bridge Creek has obliterated almost all traces of the loops where the rock once forced it to flow. Of the fins which once protruded into Bridge Canyon only Rainbow Bridge remains.

narrow neck. As Bridge Creek flowed around this fin it was able to attack the neck from two sides, once from the upstream side, where the full force of the water would have been directed against it, and once on the downstream side, where it could again eat into the sandstone after rounding the apex. During the interval when downcutting was slow and the stream bed relatively stable Bridge Creek probably formed two large alcoves, one on each side of the neck.[30] Once downward erosion began in earnest, the top of the fin at the neck was thereby left considerably thicker than was the sandstone further down. This, in effect, prevented later exfoliation from reaching all the way to the top of the fin and leaving its top surface relatively intact.

Once the increased flow in Bridge Creek began to do its work, the stream had an easy time deepening its canyon and eroding the fin. This is because the Navajo Sandstone is only loosely cemented and is thereby easily cut, especially by running water. As downward erosion proceeded, the neck was thinning and the fin was getting shorter, so the race was on as to whether the neck would be pierced through before the quickly disappearing apex was eroded back that far. Rainbow Bridge exists today because the neck won that race. Figures 7 and 9 make it appear that from the start it was no contest, but here the appearance is deceptive. First, the fin probably angled down somewhat toward the stream bed, meaning that the stream had less rock to dissolve at the apex than at the neck; second, the rapid downward progress of the stream meant that the water was able to work on one particular spot on the neck for only a short period of time. Hence, while the apex was moving quickly toward the neck, the neck itself was not narrowing very rapidly. The fin would probably have simply disappeared without a trace were it not for a very fortuitous circumstance: before that could happen the stream cut all the way through the Navajo Sandstone and abruptly hit the Kayenta.

Now, one important characteristic of the Kayenta is that it is considerably harder than the Navajo. Once the stream bed reached that platform, downward erosion slowed considerably, and Bridge Creek could now begin narrowing the neck in earnest. As the hundreds of feet of sandstone towering above the stream were undercut, great slabs began to fall off, crashing down into the narrow canyon with a huge roar and a massive cloud of dust. One day—no one has even an approximate guess when—the last slab worked loose and toppled into Bridge Creek. A window, perhaps nearly as high as Rainbow Bridge is today, was opened and the neck was pierced.

This did not automatically mean, however, that the stream would now begin to flow under the newly formed arch; in fact, the amount of debris in the bottom of the opening would most certainly have prevented that. The stream would have continued in its old channel, eroding the freestanding base of the bridge and causing its collapse in only a few thousand years. This is exactly the situation observable today at Jacob Hamblin Arch in the Escalante wilderness, where Coyote Creek continues to flow around the fin containing the arch just as if the arch did not exist. Rainbow Bridge was saved from the fate of being quickly eroded away by another lucky circumstance—the last slab probably fell into the upstream portion of Bridge Creek and dammed it. The upper layers of that final slab were considerably thicker than the bottom, so the large upper blocks of sandstone came nearly straight down, building a dam of considerable height and width. Even in its heyday the creek was not very large, and a dam of this size stopped it completely. Without the power to push this dam out of the way, the creek formed a lake behind the dam; when the water reached the top of the debris field under the arch it flowed over it and rejoined its old channel on the downstream side. This debris field was mostly sand and small- to medium-sized blocks of sandstone, both of which Bridge Creek carried quickly away. The level of the small lake on the upstream side began to drop and then disappeared completely. There was now no need for the stream to return to its original channel around the east end of Rainbow Bridge; Bridge Creek now flowed permanently under the arch.

At that point erosion at the apex of the old fin came to a halt. The westward advance of the fin ceased, and the influence of Bridge Creek on the further development of Rainbow Bridge was at an end. The stream cut slowly into the Kayenta Formation beneath the bridge, making a gorge which is today about seventy-five feet deep. The old, now abandoned, channel began to fill in with debris and blow sand to a depth of about forty feet. The new natural bridge probably had the approximate dimensions of the Rainbow Bridge we see today, but it undoubtedly had little of its grace or its marvelous symmetrical shape. These were still to come, as the rolling centuries began to smooth and shape this new creation.

At its birth, the bridge was really just a window in the original fin of stone. The rockfall that produced it probably left a rough, jagged edge, and the distinctive oval elephant-trunk shape we know today was nowhere in evidence. It remained for the small, relatively minor forces of nature such as wind, rain, and frost, forces which had always been working behind the scenes, to move to the forefront and produce the masterpiece that has emerged in our own day.

The original arch shape was no accident. As has been shown previously, this is a natural consequence of the way that the Navajo Sandstone exfoliates. This is probably a result of the dunes which produced the stone back in late Triassic and early Jurassic times; these great piles of sand were dome-shaped, so the natural erosional pattern of the sandstone would be an arch. Geological analysis has shown, however, that Rainbow Bridge is not the product of a single dune but rather a series of superimposed dunes.[31] The rainbow shape, which is extremely rare, is probably due to the shape of the original fin itself as it bent down toward Bridge Creek at its northeastern apex.

The cylindrical form of the stone making up Rainbow Bridge is a product of moisture and frost. Unique among natural liquids, water expands as it freezes. Hence, moisture present in the naturally occurring fissures close to the surface would, upon freezing, exert pressure on the thin layers of sandstone, causing them to "shell off" and thereby create a natural oval form.[32]

Finally, one cannot ignore the role of wind and rain in all of this. In this country, even a small breeze is laden with sand, and so the hard winds so characteristic of the Colorado Plateau carry tons of it into the air and press it forward at high velocities. This sand, as it is blasted into Rainbow Bridge, serves to eliminate any sharp corners and rough edges, polishing the surface of the rock and assisting in the creation of its wonderful symmetry. Rainwater flowing over the surface of the bridge also tends to smooth it

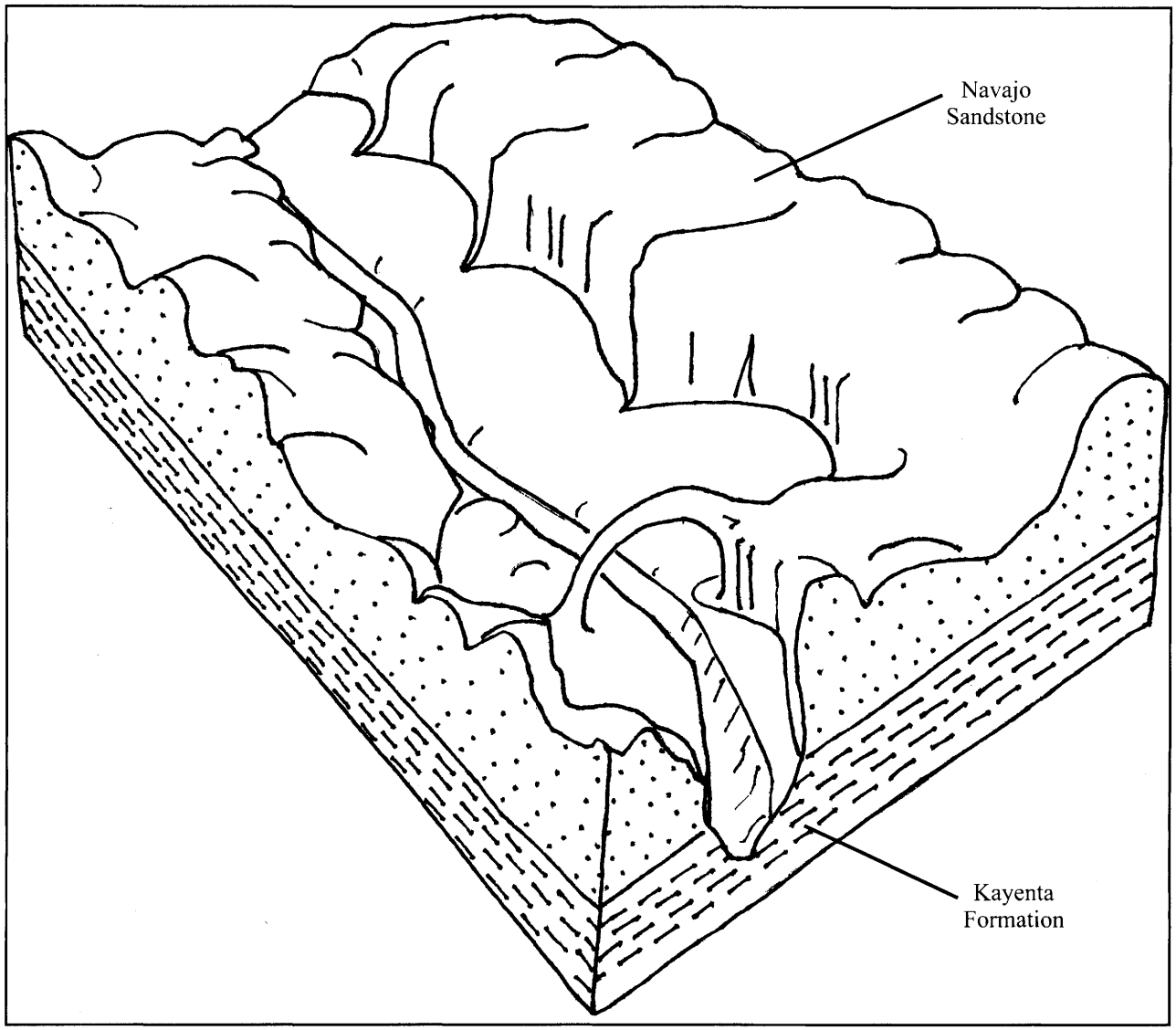


Figure 10: Geologic setting of Rainbow Bridge and Bridge Creek

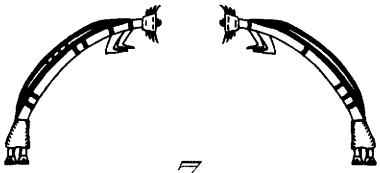
while at the same time streaking the rock with the dark mineralized bands which adorn its surface. Gradually, sometimes working with one grain of sand at a time, these seemingly minor forces used persistence and a generous allowance of time to turn the jagged and rough-hewn window into the graceful, symmetrical miracle that is today's Rainbow Bridge.

While having nothing whatsoever to do with the formation of the bridge, the pattern of groundwater flow in the vicinity of the monument played a large role in the debates over the fate of the bridge relative to Lake Powell and so needs to be treated here in some detail. The Navajo Sandstone is known all over the Southwest as a source of stored water, water which has accumulated during the eons of time in which rain and snowmelt percolated down through the overlying layers of shale and sandstone, coming to at least a temporary rest within its bountiful recesses. A rock formation which contains a large amount of stored water is called an aquifer, and the Navajo is one of the best. For example, wells drilled into the formation through the overlying layers on the Skutumpah Bench between Bryce Canyon and the Kaibab Plateau provide an abundant supply of clean, fresh water for the livestock operations on the bench and the nearby town of Kanab, Utah. Contrary to much popular opinion, however, the water is not stored in the pores of the rock itself. In fact, the Navajo has a very

low water transmissibility through its pores. Groundwater storage and circulation in this formation is rather a function of its bedding planes, truncation planes, and joints, these structures forming a ready passage for the transmission and storage of water.[33] In the vicinity of Rainbow Bridge, the sandstone directs the water toward the northeast and the southwest.

Gravity, however, pulls the water down until it eventually reaches the Kayenta. This formation has even less permeability than the Navajo, and it also has few of the planes and joints which enable the Navajo to store and transmit water. Hence, when water hits the joint between these two layers, it flows along the regional dip toward the Colorado River. In Rainbow Bridge National Monument the water table is, therefore, along the Navajo-Kayenta interface, and when that interface is at or above the surface, springs and seeps result. Before flooding by Lake Powell there were actually three small springs flowing into Bridge Creek right at the base of Rainbow Bridge having a combined discharge of 2 gallons per minute. A half-mile downstream from the bridge there was a spring in the canyon bottom with a discharge of 109 gallons per minute, and a spring of comparable size as well a mile further down, just below the junction of Bridge Creek with Aztec Creek.[34] These two springs together probably guaranteed a steady, reliable flow of water all the way to the Colorado River. In fact, the creek bed follows the Navajo-Kayenta interface all the way to the river, falling about 140 feet per mile. Later arguments about the effects of Lake Powell on the Kayenta Sandstone utiliszed the location of these springs to contend that the Kayenta was already saturated with groundwater.

Rainbow Bridge is indeed a miraculous geological occurrence, but it is not a freak. Its creation is the result of a rare and unique convergence of forces and circumstances, all of which were necessary to produce the sublime artistry that stands above Bridge Creek today. That there is nothing comparable to it existing anywhere else shows how precise and complex were the forces which nature brought to bear exactly on this spot. Geology itself can tell us how the bridge came to be, but it does not totally explain its existence. Just as we can, by careful analysis, probe the existence of the frescos of Fra Angelico or the symphonies of Mozart, in the final analysis we must at last put aside our scientific and analytic tools and simply stand in awe at the creative genius which gives us the final result. Here at Rainbow Bridge and Glen Canyon nature bestowed on us perhaps the finest thing she ever created.



3

Navajo Mountain Religion

Rainbow Bridge through Indian Eyes

That a particular piece of geography can have spiritual significance should come as no surprise to anyone even loosely acquainted with the great world religions. For Jews the huge bulk of Mount Sinai is held in great reverence as the place the Law was given to Moses. Islam reveres a small hill in Jerusalem called Dome of the Rock where the Prophet ascended into heaven. Christians revere numerous sites in Palestine, none with more fervor than Golgotha, the spot where Christ was crucified. So it is with the American Indian. Throughout North America native tribes, whether agricultural or nomadic, developed a powerful and mystic tie to the forces of nature, whose whims and inconsistencies could spell prosperity or disaster. This spiritual bond to the natural world became closely bound up with many Native American belief systems, and these beliefs encompassed geographic locations which seemed to be the source of those things which by their presence brought life or by their absence brought death. Hence, springs, mountains, and even a rainbow frozen in stone were seen to have strong spiritual power that individuals could obtain through such means as ceremonies, fasts, and dreams. These places became not merely *doors* to the spirit world, but the spiritual world *itself*, which manifested more power in certain places. These locations took on an additionally sacred character as the focus of ancient stories of creation, redemption, and retribution.

The earliest Indian people who left any recognizable trace in the Glen Canyon country were the Anasazi. What these people called themselves we shall never know, for they left behind no written record. We are aware of their presence only through the great stone cities they constructed at places like Chaco Canyon, Betatakin, and Keet Seel, and by the pictures they carefully painted or chipped into the canyon walls. When the Navajos ventured into the Four Corners country centuries later, they encountered the long-silent structures whose now-lifeless windows stared out from the dark alcoves, and they gave their builders this modern name meaning "Ancient Ones."[1] When exactly they arrived in this area we shall probably never know, but their great pueblos were starting to rise on the mesas and in the canyons about A.D. 700. By A.D. 1300, they were gone. Though never populous in Glen Canyon or its tributaries, their presence is attested by their small granaries, great pictograph panels, and mysterious trails cut into the steep ramparts of stone.

That these people knew of Rainbow Bridge is undoubted—their presence is marked by an ancient trail which leads to the top of the bridge. What they thought about it would be a matter of pure conjecture except for one small hint they left behind. When the Cummings-Douglass Expedition reached Rainbow Bridge in August, 1909, they discovered in the very shadow of the bridge itself the remains of what appeared to them to be an ancient stone altar.[2] William B. Douglass described it as follows:

> Almost under the arch, on the north side of the gulch, is a pile of rocks which formed the wall of some prehistoric structure in front of which slabs of

> sandstone set on edge outline an oval 3 x 5 feet—an altar, perhaps erected by the cliff dweller who no doubt viewed the great bridge with superstitious awe.[3]

Later visitors to the bridge remembered seeing this structure and reported it. On a 1913 visit to the bridge, Theodore Roosevelt wrote, ". . . almost under [the bridge] there is what appears to be the ruin of a very ancient shrine."[4] Neil M. Judd, a member of the discovery party, noted,

> In 1909 a small slab-sided altar stood close against the east base of Rainbow Bridge, evidence that some primitive had tarried there to offer his prayer to the Masterbuilder. That simple little altar was still present in 1923, when I passed a second time, but it has since succumbed to careless feet.[5]

In fact, by 1930 it was gone—whether as a result of "careless feet" or deliberate destruction there is no way of telling. It is indeed a pity that no modern archaeologist was able to analyze this structure. Perhaps it could have provided useful information about these people and the place of Rainbow Bridge in their spiritual world view. As it is, we can only conjecture that they held the site in some sort of reverence, but no other conclusions are possible.

The next tribal group in the Four Corners country were the Hopi. They were already firmly established on the mesas of northern Arizona in 1540 when they were visited by the Spanish explorers then moving north from Mexico, but there is considerable evidence that they were in the area much earlier. Tree ring data has placed the origin of their village at Oraibi as early as A.D. 1125, and the tribe itself claims direct descent from the Anasazi.[6] Sites sacred to this people certainly extend north to the Little Colorado and into the Grand Canyon, and perhaps even as far as Rainbow Bridge itself. It is possible that elements of the ancient Anasazi religion are present today in the Hopi ceremonial and that the Hopi themselves once inhabited, or at least regularly visited, the Rainbow Plateau. They certainly claim to have done so.

Christian Lingaard Christensen, a missionary who ministered to the Hopis and other Arizona Indian tribes for forty years, relates that in Hopi legend Rainbow Bridge constituted the last Hopi retreat as they were being driven from their ancestral lands by the invading Navajo. He further states that the Hopis worship this bridge and that their name for it is Shu-he-moe (The Beautiful).[7]

There is at least some Navajo corroboration of this story. The legend of the Navajo Windway, as told to Father Bernard Haile in 1929 by Black Mustache of Chinle, Arizona, relates that the protagonist visited the Snake People (Hopi Snake Clan) at their Navajo Mountain home. The Snake People said, "Navajo Mountain is our mountain. On the east side a rock is bridged across, that is our trail." Leland C. Wyman equates this trail with Rainbow Bridge.[8]

The link between today's Hopis and Rainbow Bridge is, however, a tenuous one. There seems to be no record of regular pilgrimages in historical times from the Hopi villages to the Navajo Mountain region and therefore no indication that Hopi ceremonial found the offering of prayers there to be a necessity. However, the Hopi religion is very secretive, mystical, and full of symbolism. It may well be that the ancient memory of a far-off Rainbow Bridge is more important to Hopi mysticism than non-Hopis will ever know or appreciate.

Like the Hopis, the Southern Paiutes were living in the area of Navajo Mountain and the surrounding country long before the existence of any historical record. Ethnographers surmise that their ancestral homeland extended east-west from Monument Valley to the Little Colorado and north-south from the San Juan River to the foot of Black Mesa and the Moenkopi Plateau.[9] The first white party to encounter them was the Dominguez-Escalante Expedition in 1776, who described the Paiutes living in the vicinity of Navajo Mountain as a separate local entity.[10] The existence of constructed trails which the Fathers used to cross the canyons of the Rainbow Plateau indicate their presence as permanent residents. It is likely that the earliest sighting of Rainbow Bridge in historical times was made by these people, although they seem to have attached no spiritual or mythic significance to the bridge.

The last tribe of significance to migrate into the Colorado Plateau country were the Navajos (Diné). When they arrived in the area is not known, estimates ranging from A.D. 1000 to 1525,[11] but they were resident in the mountains and high plains along the Arizona-New Mexico border when Coronado made his historic expedition into the Southwest in 1540.[12] The first recorded official contact of Navajos with the Spaniards was made by Antonio de Espejo in 1583 near Mount Taylor in New Mexico.[13] The territory they occupied in present-day Arizona remained relatively stable until the late 1700s when they began

to migrate west. By 1800 the pattern of Navajo settlement extended to the rim of Marble Gorge along the Colorado River and as far south as the Little Colorado. The early Spanish accounts describe a people who combined farming with herding, and they were even then aggressive, adaptable, and highly successful. Coronado described their hunting skills as "the best . . . of any I have seen in the Indies."[14] However, their aggressive territorial expansion plus their propensity for increasing the size of their herds by raiding those of the Spanish, Pueblos, and, later, the Americans quickly brought them into long and bloody conflict with governmental authority. Finally, in 1863 the United States determined to put an end to this ceaseless warfare once and for all. Under the efficient but merciless pursuit of the U.S. Cavalry under Colonel Kit Carson, the Navajos were cowed into submission by a combination of butchery, starvation, terror, and brute force, and, in 1864, marched east across New Mexico to a dreary encampment at Fort Sumner on the banks of the Pecos. This sad chapter in Indian-white relations is enshrined in Navajo history as the "Long Walk," and it is a tale every Navajo has engraved on his heart to this day.

Those Navajos who could fled the armed might of Carson's cavalry and hid out in isolated canyons in small bands. The government was perfectly capable of searching them out and forcing them east, but by March, 1865, there were 9,022 Navajos at Fort Sumner occupying a camp which had been prepared for only 5,000.[15] Federal resources were overwhelmed and so the cavalry was ordered to halt operations. It is estimated that several thousand Navajos escaped the Long Walk, remained in their homeland, and were on hand to welcome their brothers when the tribe was allowed to return in July, 1868. According to tribal legend, nearly a thousand of the Diné, under the thirty-five-year-old Hashkéníinii (or Hoskininni), fled north and west to the foot of Navajo Mountain.[16] Although the actual number of refugees who found their sanctuary among the canyons and buttes of the Rainbow Plateau was probably much smaller than this, it is nonetheless certain that this was the first substantial Navajo settlement of the area. It had never been looked upon as a particularly desirable territory. In fact, in early Navajo ceremonial, this far western country was the place to which Monster Slayer (Naayéé Neizghani) had banished the Paiutes. Now, however, this place of protection was seen in a whole new light. The Navajo term for this sacred mountain is Naatsiœáán, which literally means "Head of Earth Woman." Here Monster Slayer was born in a flint hogan and raised in a single day, placing himself as a protector between the Diné and its enemies.[17] Hoskininni, whose only initial claim to leadership was his public defiance of the U.S. Cavalry, became, in time, a religious leader and paramount singer of the Protectionway Ceremony.

The new Navajo settlers encountered small bands of Paiutes living and farming in the canyon bottoms east of Navajo Mountain, and the two tribal groups managed to live peacefully together for decades. It is certain that by the late 1800s both tribal groups knew of the existence of Rainbow Bridge and a few scattered individuals knew how to get to it from Navajo Mountain. It is equally certain that the Navajos regarded the bridge as a sacred site and performed ceremonies there. Alone among tribes of the Colorado Plateau, the Paiutes seemed to have no religious or ceremonial attachment to Rainbow Bridge.[18]

The Navajo language contains no word for religion as that term is usually understood in Western culture. To the Navajo the world of the supernatural and the balance of harmony which must be maintained are so much a part of everyday existence that life and religion are inseparable. In the Navajo spiritway there are no sacred buildings, no holy times or seasons, no dogma. Of supreme importance, however, is the maintenance of good relations with the spirit world and a personal balance of life, a balance which requires constant attention and effort. Two personal forces require the attention of every Navajo. First are the Earth Surface People. These are ordinary people alive at the moment together with the ghosts of the dead. The second are the Holy People, "powerful, mysterious, legendary, traveling on sunbeams, rainbows, or lightning."[19] Navajos believe that every aspect of nature has its own Holy People. Hence, there are Holy People for rocks, springs, clouds, and mountains, as well as iron and crystal.[20]

Both the Earth Surface People and the Holy People can be sources of discord and disharmony, and when these intrude into the life of a Navajo, harmony must be restored. This may require a "sing," or ceremony conducted by an individual who has been taught the ceremony and authorized to perform it. While the Navajo dislike the term "medicine man," it is perhaps as close as the English language allows us to come to that person's function. Sings may be curative or preventative, and are used to restore balance

or to maintain it. To the Navajo, "Ceremony and song bring safety."[21] Most ceremonies and sings need not be performed at any specific site, but there are some ceremonies which are related to a holy site and must be performed there or not at all.

An understanding of the phrase "The earth is our mother" is the key to unlocking the reason for the regard shown Rainbow Bridge by the Navajo. By this phrase is meant that the ties of the Diné to the earth are so basic that the earth itself is the source of life and death. Certain geographical locations, usually involved with a sacred story, are, therefore, involved in tribal ceremonies and are held in special regard. Their sacred character is often related to the presence of one or more of the Holy People in the rocks, water, or plants at that location.

The main ceremonies used around Navajo Mountain are the Protectionway and the Blessingway. These are used to restore harmony to the Head of the Earth, with Monster Slayer and Born-for-Water (Tó Bá Jíshchíní) at its top, together with the Holy Water People. These people include clouds, lightning, and rainbows.[22] Clearly, harmony with these Navajo Mountain deities will bring the blessings of rain to the desert plateau, and the connection to the storm-spawning peak of Navajo Mountain was an obvious one. Couple this with a petrified rainbow sitting at its base and the confluence of two mighty rivers only a few miles to the northeast and you find here a triad of holy sites, all connected to water, and all important in the life of the Navajo on the Rainbow Plateau.

One Navajo tale of the origin of Rainbow Bridge invokes the twin themes of rescue and divine protection reminiscent of the Old Testament story of Noah, the flood, and the rainbow. It seems that long ago one of the Holy People, a hero god, was hunting in Bridge Canyon. A storm struck on Navajo Mountain and a torrential flash flood tore down the canyon, trapping the hunter. Just as death seemed near the Great Sky Father cast a rainbow across the flood and the holy one walked across it to safety. The rainbow turned to stone and remains today as evidence of the care he continues to show for his children.[23] Another tale relates that the Rainbow-Turned-to-Stone was brought to Navajo Mountain from the midst of the Great Ocean on the back of Sunlight.[24]

Nakai Ditl'oi, a singer on the Utah portion of the Navajo Reservation, relates a different story about the origin of the bridge.

> When the Diné were emerging from the east, they stopped on a large mesa near Navajo Mountain to make a home on the mountain for Lageinayai. He is the god who was given lightning to create rain. His name means "came into being in one day." In gratitude for his home on Navajo Mountain, Lageinayai promised to protect the Diné and look after their well-being. Sometime later, a group of the Diné left this home with a god named Danaiize. He has the power to create and to travel on the rainbow. The Diné reached a canyon which they could not cross. The Diné did not know what to do. Danaiize told them he would create a rock rainbow which would be a bridge for the Diné. It was in this way that the Diné were able to cross the Canyon of the Rainbow Bridge.[25]

In several Navajo tales, the bridge is actually two rainbows, a male and a female, arching together in perfect marital union.[26] From this union, young rainbows and clouds are born and float together toward the mesas, bringing the blessings of moisture and life to the people, plants, and animals of Navajoland. In this story the east end of the arch is male, the west end female.[27]

This male-female duality among sites occupied by the Holy People is common in Navajo spirit stories and finds further expression in their view of the junction of the San Juan and Colorado Rivers just a few miles to the northeast of Rainbow Bridge. This second location of holy marriage is called Water-Come-Together (Tó ahidiidlíni), the other home of the Water People. The female Colorado River and the male San Juan River join to produce an infinite number of Water Children, clouds and rain, which would then drift southeastward.[28] The correct offering at this spot was yellow corn pollen and jewel offerings to accompany prayer.[29]

The first non-Indian visitors to the bridge noted with interest the lengths to which their Navajo companions would go just to avoid walking under the span of the arch. This teaching derives directly from the impossibility of walking under an actual rainbow; as one approaches it the rainbow appears to back away. This, then, is the rainbow's preference, so for a pious and sensitive Navajo one may go near a rainbow but one should never attempt to walk under it.[30]

Not only is the bridge itself the home of the Holy People, but several of the nearby springs are also considered holy. Chief among these is the spring

Figure 11: Rainbow Bridge and Navajo Mountain. The juxtaposition of the moisture-laden mountain with the Rainbow-Turned-To-Stone is powerfully symbolic to the Navajos of the region.

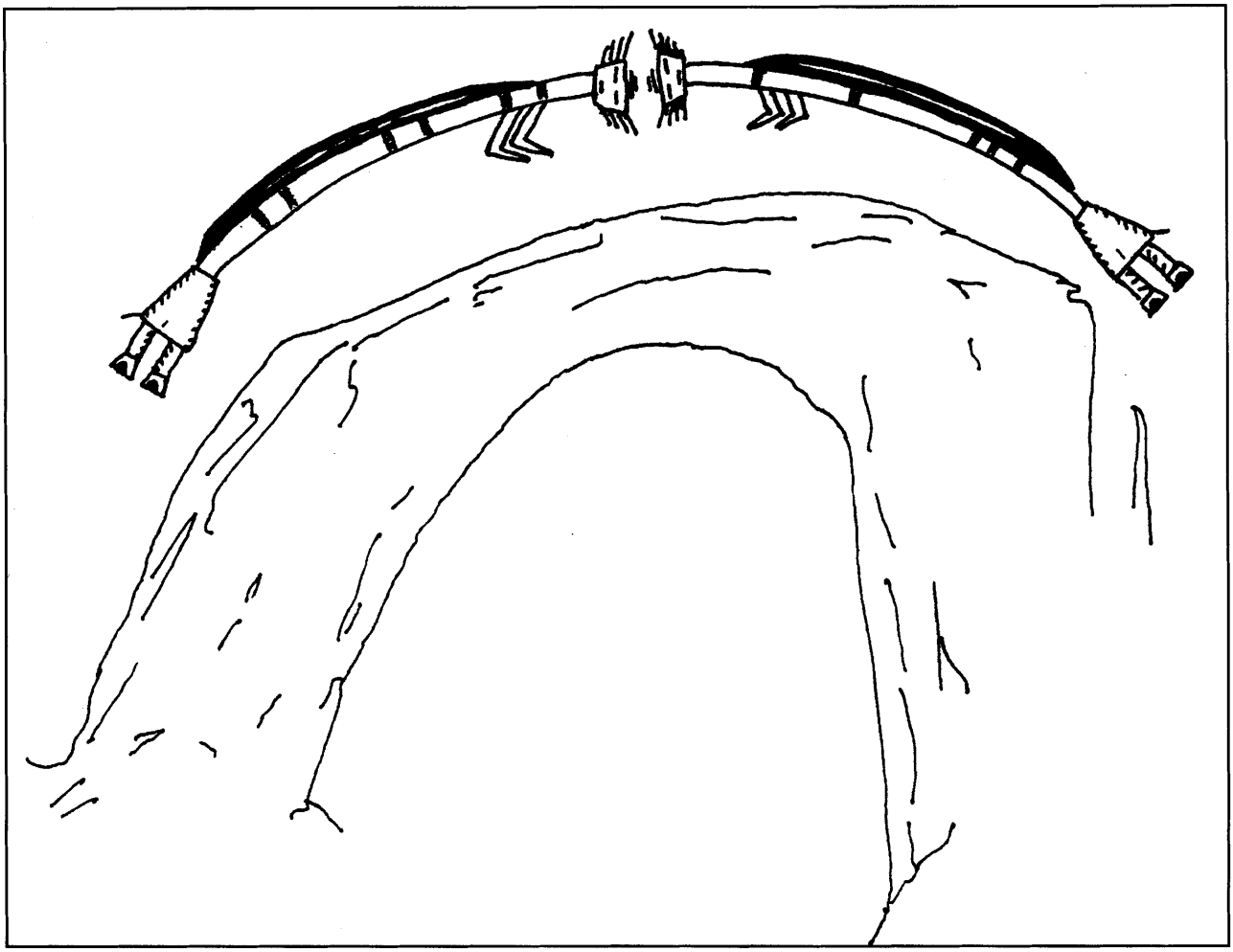


Figure 12: A Navajo view of Rainbow Bridge. In one Navajo story the bridge is actually a double rainbow formed by a male and female arching together in perfect marital union.

at Echo Camp within the great alcove. Navajos link this spring with War God Spring high up on Navajo Mountain, and if prayers for rain are being offered it is not necessary to go any further down the canyon than this spring. Several locations both upstream and downstream from the bridge are also rendered sacred by the presence of the Holy People in the sandstone pillars serving as sentinels for the Great Rock-Arch. It would seem that the large spring a half-mile below the bridge also had sacred associations.[31]

Navajos come to Rainbow Bridge to make prayers and offerings for a number of reasons. Certainly the need for moisture is a paramount reason, and both the summit of Navajo Mountain and Rainbow Bridge are used for this purpose. In fact, twice a year an offering is made on Navajo Mountain and at Rainbow Bridge for growth and increase in crops and the rain necessary to make this happen. In this offering it is considered essential that the prayers be made at both sacred locations.[32]

However, it is not only for rain that the Holy People in the bridge are invoked. Offerings are made here as well to plead for relief from epidemics.[33] It is also proper to pray here to ask individual protection and also to make offerings for the welfare of the Navajo Tribe itself. For most such prayers the proper offering is corn pollen, but one singer reports the necessity of offering twelve cm of turquoise loops.[34]

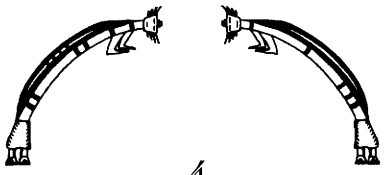
Buster Hastin Nez, a Navajo living near Inscription House, describes making a pilgrimage to Rainbow Bridge about 1935 for the purpose of holding a major ceremonial requesting rain.[35] There were five people in all, including some women. Each had his or her opportunity to sing and to make a precious

Figure 13: The San Juan River (left) joins the Colorado in Glen Canyon, 1955. The junction of these two great rivers, only a few miles from Rainbow Bridge, completed a triumvirate of holy sites important to the Indians of the area.

offering at the spring and the bridge. Navajos believe that the prayers and offerings at the Rainbow form a mist which comes up in spurts as the Rain Prayer is made. Mr. Nez states quite unequivocally that the prayed-for rain actually started as the party was returning from the ceremony. Ernest Nelson, a prominent singer in the Shonto region, says that to have a proper major ceremonial at the bridge requires the presence of two singers plus the one requesting the ceremony.[36]

It is also worth noting that while many ceremonies and sacred sites are of concern to and used only by Navajos in a particular community or a limited area of the reservation, such is not the case with Rainbow Bridge. Ernest Nelson states that people travel from all over Navajoland to use the Rock-Arch for ceremonial purposes, one person from a community often standing in for his friends and neighbors at the sing.[37]

From all of this it is clear that the massive presence of this Rainbow-Turned-to-Stone has had a profound spiritual effect on almost all the native peoples who have come in contact with it. Whether as an object of worship itself or as the place of residence for supernatural beings whose aid must be invoked, Rainbow Bridge has had a huge presence in the spiritual lives of American Indians from prehistory down to our own time. While non-Indians might scoff at the idea of worshipping a piece of the landscape, the depth of feeling it has evoked among the first of its visitors and the anger and bitterness expressed as the unimpeded waters of Lake Powell crept under its span reveal that perhaps for Western man as well, Rainbow Bridge has cast a spiritual spell. Certainly one cannot ignore the wellspring of emotion many have felt at standing alone deep in the midst of a trackless wilderness under a soaring buttress of rock set against a deep blue sky. Many have gone away from such an experience utterly changed. As Wallace Stegner so beautifully put it, "In the decades to come, it will not be only the buffalo and the trumpeter swan who need sanctuaries. Our own species is going to need them, too. It needs them now."[38]



4

From Shadow into Light

The Discovery of Rainbow Bridge

From their ancient perch deep within the sandstone walls of Bridge Canyon the Holy People gazed down in amazed bewilderment. Below them, in a scene never before witnessed, thirteen horsemen and assorted pack animals were moving steadily down Nonnezoshi Boko. Although only midmorning on this brilliant August day the heat was already intense, and the ten whites, two Paiutes, and one Navajo were sweat-soaked and caked with dust. The shod hooves of the white men's ponies clanked noisily on the numerous rocks of the dry creek bottom as the party, stretched out now for nearly a mile, pushed their exhausted mounts relentlessly down canyon. On they went, under the venerable gaze of Standing Rock, past Talking Rock, on toward Talking Boy Rock and Talking Girl Rock, and as the visitors passed by, these sacred sentinels sent word of this intrusion silently and swiftly down toward the twin rainbows of Tsé naní àhígíí.

Four of the party were clearly ahead of the others and were setting a quick pace. One man, tall, with jet-black hair angling out from under his tan hat, seemed determined to remain in the lead. As the others moved to catch up he would spur his tired pony forward, seemingly unmindful of even his own welfare, his gaze never wavering from the vistas opening up straight before him. The other three seemed to be riding as a group. The young Paiute rode with the calm assurance of one who knows the country and is confident of the trail. On his right was a quiet, wiry gentleman who exuded a somewhat aristocratic air born of education and many years of leadership. Occasionally the Indian would turn toward his companion and gesture ahead and to the left as if to give directions to the as-yet-unseen goal. Their companion seemed to hang back a little, deferring to the others. He sat his horse in the manner of one who had spent much of his life in the saddle. The party had been on the trail, such as it was, for five days, and only the quiet determination of the university professor and the skilled leadership of their outfitter had gotten them this far. Their horses had little stamina remaining, and the men were bone-weary.

Suddenly and without warning the creek bed turned abruptly left and the three riders pulled to a halt. Here, within sight of the Holy Water People in the sacred spring, the professor let out a loud cry and stood up in his stirrups. Straight ahead, shimmering in the heat-stirred air, was the Great Rock-Arch. The rider-in-a-hurry had passed right by the narrow viewpoint without seeing it, and now he came back to stand beside his companions. Then, as the teacher and his Indian guide quietly savored the fruits of so great an effort, the wrangler and the impatient one urged their horses up the steep embankment and began to race toward the bridge. The better horseman was victorious and for a few brief moments sat alone beneath the petrified rainbow, the first white man ever to do so. Within the hour, all members of the party had reached the bridge and what had heretofore been a combination of legend and rumor was now ready to be revealed to the world at large beyond this canyon hiding place.

The area around them seemed pristine; no evidence whatsoever showed the passing by of any man

since the Ancient Ones deserted the area many centuries before. No one in the party, however, believed himself to be the first to set eyes on this spectacle. After all, they had been guided here by an Indian who knew the way and therefore must have passed down this trail before. He likewise had probably been shown the way by others of his tribe. At least one member of the expedition, despite the lack of any tangible evidence, doubted that he was the first white man to see the arch and later inquired about it of others more knowledgeable than himself. What seems sure, however, is that previous to that day knowledge of the Rainbow-Turned-to-Stone had never reached beyond the rugged landscape of Navajo Mountain and the surrounding plateau. Hence, August 14, 1909, is officially recognized as the date of the discovery of Rainbow Bridge.

This date was not the beginning of the human history of the bridge, however. Perhaps the first man to see it was a hunter-gatherer of the Archaic period (7000 B.C.–A.D. 750), who might have stumbled upon it while out foraging for food. These people are known to us today as the Basketmakers, and while no evidence of their passing has been found in the National Monument, several archaeological sites of that period are known within a twelve mile radius. For example, Earl H. Morris of the American Museum of Natural History found a Basketmaker II burial in Charcoal Cave within Forbidding Canyon while exploring with the Bernheimer Expedition in 1922, and with such sites so close it seems unlikely that the bridge would have escaped their notice.[1]

The first people to leave physical evidence of their presence at the bridge are the Kayenta Anasazi, who inhabited the Glen Canyon region between A.D. 1050 and 1220.[2] They left small storage structures and an occasional habitation throughout the area, but the lack of any significant refuse piles indicates that their occupation of these sites was decidedly short-term. The salvage studies conducted by the University of Utah in Glen Canyon prior to completion of the dam found seventy Anasazi sites in the main canyon between the mouth of the San Juan River and Lees Ferry, only five of which could be called habitations.[3] The fact is there was little game in the canyons and almost no land suitable for farming, so while there is abundant evidence of the Anasazi in Glen Canyon, it is clear that any occupation was during short periods of time and at those scattered locations where some agriculture was possible. It has been speculated that what use there was of lower Glen Canyon in the twelfth century was due to the severe drought, which forced the Anasazi into the canyons to grow what little food they could before they finally abandoned the region completely.[4] The numerous hand- and toeholds pecked into the canyon walls leading from the river to the benches above reinforce this theory.

Excavations in Rainbow Bridge National Monument itself have yielded one structure, one chipping area where tools and weapons were probably constructed, and two pecked trails, one leading to the bald rock area above the bridge and one down to its top.[5]

The lithic site is on the east side of the monument under a shallow alcove; the structure, located in a cave high up on the west side of the monument, consists of two parallel masonry walls which were once a single room. The site is accessible only by means of a shallow and precarious trail leading up from the steep talus slope below.

The prehistoric trail begins downstream from the bridge and climbs the west wall of Bridge Canyon by means of a series of pecked hand- and toeholds toward the mesa above the arch. From there it is possible to traverse south to the rocks above the bridge, where a dozen steps in two parallel rows lead down to the top of the arch. While there is some evidence of the use of metal tools in constructing this trail, it is the opinion of Northern Arizona University archaeologists that this work was done later by white men to improve an already-existing prehistoric route.[6] It is almost certain that this is the path used by the Douglass survey party to reach the top of the bridge on the day of its discovery. Why the Ancient Ones wished to climb to the top of this immense span is unknown, unless they, like us, had a fondness for the view.

Then, of course, there is the matter of the stone altar or shrine. The discovery party of 1909 noted its existence on the east side of the canyon almost under the bridge itself. As described in chapter 3, it was most probably of Anasazi construction, but sometime between 1923 and 1930 it disappeared. Why it was destroyed and who did the deed will certainly never be known.

By the middle of the thirteenth century, all evidence of continued Indian occupation in Glen Canyon ceases, and so Rainbow Bridge undoubtedly sat unnoted and unvisited until its rediscovery by the modern-day Paiutes and Navajos over six centuries

later. No one knows for sure when Indians of the modern period found the bridge. Paiutes were certainly living south of the San Juan River on the north and east sides of Navajo Mountain by the early 1800s, and it may well be that they were the first to know of Rainbow Bridge in modern times.

Jim Mike,* one of the Paiute Indian guides on the 1909 discovery expedition, told the following story of his first view of the bridge, an event which probably occurred around 1880:

> We lived in Paiute Canyon, I was a boy, and on this day we were looking for grass for feed for the horses in the canyons beyond the north slope of Navajo Mountain. It was me, my father, and Nasja,** who lived nearby. They were setting up camp and I went out to look for feed. I went into this canyon and saw this big rock with a hole in it. I never saw anything like that. I ran back scared and told my father. He and Nasja left without going to see it.[7]

While there are those who have disputed the authenticity of Jim Mike's story, it is certain that the Paiute community of Navajo Mountain knew of the bridge long before the first white visitor ever set eyes on it. Hence, scenes such as this certainly did occur among the Paiutes, perhaps several times, during the nineteenth century.

As was shown in chapter 3, significant Navajo settlement in the Navajo Mountain area did not occur until the time of the Long Walk, 1863–1864. Seeking to escape the relentless pursuit of Colonel Kit Carson's troops, bands of Navajo refugees used the rugged canyons on the slopes of Navajo Mountain to hide and to scratch out a bare-bones existence until the soldiers gave up the chase. It is distinctly possible that some small band or individual came upon the bridge while traversing these canyons on foot or by horse. One Navajo legend has the bridge being discovered by the great chief Hoskininni himself, but in retrospect it seems more likely that it was first chanced upon by a member of Hoskininni's band, a medicine man known variously as Sharkie, One-Eyed Man of the Salt Clan, or Blind Salt Clansman.[8] Karl Luckert relates the Navajo story of Sharkie's discovery of Rainbow Bridge as follows:

> . . . [H]e ventured into this canyon while rounding up horses. He followed the bed of the wash and, watching his path, he did not notice the arch until he was right under it. "What is this? Why did I not see it earlier?" he wondered. He backed up a little ways and discovered that, indeed, a bend in the ravine had, in a natural manner, obstructed his view.[9]

If authentic, this would place the Navajo discovery of Rainbow Bridge sometime around 1868. It is certain that the elderly Blind Salt Clansman knew of the existence of the Great Rock-Arch, for it was he who first revealed it to Louisa Wetherill in 1907. His story to her is perhaps the first time word of the bridge had passed beyond the small, tight circle of Indians who knew of it.

The first passage of non-Indians through the Navajo Mountain country is the subject of controversy. When the Cummings Archaeological Expedition of 1909 discovered the great Anasazi ruin of Inscription House deep in Navajo Canyon, they found there what seemed to be a Spanish wall writing bearing the date 1661 together with the Latin inscription "*Anno Domine.*"[10] Both Cummings and other archaeologists who viewed the site considered the glyph clear and authentic, but its origin remained a mystery. No official Spanish record showed any religious or military expedition passing anywhere near Navajo Mountain. However, the inscriptions disappeared a decade later, probably due to vandalism, and now modern scholarship, with advanced computerized enhancement techniques, has cast doubt on the authenticity of this wall writing, leaving modern historians with a true enigma.

The first traverse of Glen Canyon is no mystery at all, for it belongs to the well-documented and famous exploring expedition led by Fathers Silvestre Vélez de Escalante and Francisco Domínguez, Franciscans of the New Mexico Province. Their party left Santa Fe on July 29, 1776, with the express intention of finding a secure northern route to the missions of California. However, the terrain forced them further and further north, away from their objective and through western Colorado and northeastern Utah. Out of time and critically short of supplies, they finally turned south at Utah Lake, passing through the deserts of western Utah and northern Arizona, and eventually encountering the mighty Colorado River at the mouth of the Paria on November 1. Unable to find a ford at what is today Lees Ferry, they turned north again, traveling along the cliffs above the river,

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* Earlier in life Jim Mike was known as Mike's Boy.

** The father of Nasja Begay, the Paiute who served as the main guide on the 1909 expedition.

desperate to find a crossing before being overcome by the cold, hunger, and thirst which now dogged their every footstep. Finally, near Gunsight Butte and not many miles above the mouth of Navajo Creek, they found the salvation for which they had prayed so hard. Crossing the river on November 7, they fired off their muskets in thanksgiving and headed quickly south toward the Spanish settlements. The starved and exhausted party arrived back in Santa Fe on January 2, 1777, grateful just to be alive.[11] They had passed within thirty miles of Rainbow Bridge, but, of course, they knew nothing of its existence. The trail across the Colorado which Father Escalante pioneered, now known as Crossing of the Fathers, was used by an expedition from Mexico one more time—by the Antonio Armijo party in 1829.[12] In 1848 control of the area passed to the Americans.

For the next four decades Glen Canyon remained serene in its isolation, little visited and unexplored. Then, in 1869 there came floating by one of the most daring and romantic exploring expeditions ever undertaken in North America. John Wesley Powell was an American original. Born in Morris, New York, on March 24, 1834, he grew up with precious little formal schooling and remained largely self-taught throughout his life. Yet, in spite of this, he was eventually appointed to head the Bureau of American Ethnology and the U.S. Geological Survey. However, it is not for his monumental scientific achievements that he is best remembered, but rather for his exploration of the Colorado River and its canyons. He conceived the idea of such an expedition in 1867 while exploring the headwaters of the Grand (as the upper Colorado River was then known) in the vicinity of Middle Park in the Rocky Mountains.[13] Organizing and supplying such a gigantic undertaking taxed even Major Powell's considerable abilities, but on May 24, 1869, he and nine others set off from Green River, Wyoming, in four little boats of his own design. When the party emerged from the Grand Canyon near Callville, Nevada, ninety-five days later, they had written a new chapter on American daring and ingenuity and had filled a huge gap in the maps of the Southwest.

On July 28, the Major and his party emerged from the terrors of Cataract Canyon and pulled up at the mouth of a muddy, foul-smelling stream they christened the Dirty Devil. They were now in Glen Canyon, almost certainly the first party ever to arrive there by boat. For the next eight days they floated at a leisurely pace past the towering red walls and dome-shaped spires, noting the alcoves, monuments, and glens which gave the canyon its name. On July 31 they camped at the mouth of the San Juan, and the next day dropped down two miles to a short canyon and alcove they called Music Temple. They were now only a few short miles from Rainbow Bridge, but on August 3, early in the morning, they sailed quietly past the mouth of Aztec Creek without stopping or even noting its existence.[14]

Major Powell would, however, get a second chance. On May 22, 1871, he was back on the river with a new crew, new boats, and a new enthusiasm. With the knowledge of the river and the surrounding country gained on the first expedition, he was able to plan with more precision and foresight. For one thing, he had arranged to be resupplied at certain critical points, thereby avoiding the near-starvation that had plagued his 1869 journey. On September 30, the second expedition reached the mouth of the Dirty Devil and the entrance to Glen Canyon. By now supplies were very low and the next supply party was to meet them at Crossing of the Fathers a hundred miles down river. On the morning of October 5 they passed the mouth of the San Juan and paused once again at Music Temple. Frederick Dellenbaugh described what happened next:

> Leaving Music Temple . . . we soon arrived at a pretty rapid with a clear chute. It was not large, but it was the only real one we had seen in this canyon and we dashed through it with pleasure. Just below we halted to look admiring up at Navajo Mountain . . . The Major contemplated stopping long enough for a climb to the top but on appealing to Andy for information as to the state of the supplies he found we were near the last crust and he decided we had better pull on as steadily as possible . . .[15]

The "pretty rapid" Dennenbaugh describes is undoubtedly the one at the mouth of Aztec Creek. Therefore, had the Major decided to climb Navajo Mountain he would, in all probability, have hiked directly up Bridge Canyon and become not only the explorer of Glen Canyon but the discoverer of Rainbow Bridge as well. Sadly, for the lack of a few supplies, the bridge was to remain hidden from the world for another thirty-eight years.

The next missed opportunity resulted from what was perhaps the strangest notion for the use of the canyons of the Colorado ever conceived. While

prospecting for gold and silver in the country just east of Flagstaff, S. S. Harper of Philadelphia hit upon the idea of building a railroad along the Colorado River which would link Grand Junction with San Diego. The proposed route would follow the river at water level through its enormous canyons to the terminus on the Gulf of California, where the line would turn westward to the Pacific. The idea attracted the attention of Frank M. Brown, a Denver businessman with money to invest, and on March 25, 1989, the Colorado Canyon and Pacific Railroad Company (CCPRR) was formed. Brown hired Robert Brewster Stanton as chief engineer and gave him the responsibility of conducting a survey as to the feasibility of the idea.

Stanton had been born in Woodville, Mississippi, in 1846 and educated at Miami University of Ohio, graduating in 1871. He decided to become a civil engineer and worked at various projects in Ohio, Kentucky, and Tennessee before becoming a division engineer for the Union Pacific from 1850 to 1884. He then set up a private engineering practice and stayed with it until joining the CCPRR.

Stanton's main survey party set out from Green River, Utah, on May 25, 1889, with sixteen men in six boats, President Brown in command.[16] By the time the party reached Glen Canyon on June 24 they were down to three boats and eight men; the others, having had their fill of rapids and muddy water, had gone home. The small party spent eight days in Glen Canyon, and Stanton makes much of the beautiful glens and alcoves and the fine coloring of the sandstone walls. However, they rarely ventured far from the main river and, therefore, never found Rainbow Bridge.[17]

Still, like Major Powell before him, Stanton got a second chance. On July 10, disaster struck the party in Marble Canyon and President Brown was drowned. On July 15, two more of the party drowned, and the remaining men abandoned the canyon near Vasey's Paradise. Not one to give up easily, Stanton secured additional funding and by December 10 was back on the river with new boats and, with three exceptions, a new crew. This time his men hauled the boats overland to the head of Glen Canyon and started there. On December 19, Stanton noted a collection of ruins at the mouth of a side canyon just below the confluence with the San Juan. The area was complete with wide bottomlands where cultivation might have been possible, and from his description it seems obvious that Stanton had found the ruins at the mouth of Aztec Creek. He also mentions hiking up the side canyon at least a mile, meaning that he was probably the first white man to come within five miles of Rainbow Bridge.[18]

On April 26, 1890, Stanton's party reached the mouth of the Colorado River and thereby completed the survey. The railroad, while probably feasible from an engineering standpoint, would have been enormously expensive and was never built. Stanton, however, had been bitten by the mystique of the canyon country, and a few years later he was back in Glen Canyon with another scheme for making money from the river. Despite his coming so close, however, there is no record of him ever seeing Rainbow Bridge.

The exploring expeditions of Powell and Stanton certainly made the outside world aware of the canyon country and of the Colorado River in particular, but the lack of resources in the area and the difficulty of travel within it kept most white men many miles away in the Mormon settlements of Escalante and Kanab on the west and Blanding and Bluff on the east. This isolation would begin to disappear when gold was discovered in Glen Canyon during the late 1800s. The magic metal had actually been found decades earlier at Padre Creek by Pardyn Dodds, George Riley, and John Bonnemort, who had been engaged by Major Powell to resupply the 1871 expedition at the Crossing of the Fathers. While waiting for the Major's party to come down the river, the three panned for a little color and actually found some very fine specks in the river sand.[19] However, this minor discovery prompted no further efforts, and Glen Canyon's resources of gold would not be systematically exploited for another dozen years.

The pivotal event that would eventually lead to a mini gold rush in Glen Canyon actually occurred far to the east in Monument Valley. In 1879, a prospector by the name of James Merrick visited the Mitchell family, then living near the San Juan River on the banks of Montezuma Creek, and persuaded Ernest Mitchell to join him in a search for a mythical silver mine supposedly in the area. The Navajos had long been famous for their ornamental work in silver, but the source of their raw material remained a mystery. Rumors abounded of Spanish treasure or a lost mine, and it was this that Mitchell and Merrick set out to discover. In March of 1880, the two were killed by Navajos in Monument Valley, and when the bodies were discovered their pockets were found to contain samples of high-grade silver ore. Speculation ran

rampant that these men had actually found the lost Spanish silver mine and were killed by the Indians to prevent them from revealing its whereabouts. This news sent prospectors all over the plateaus and canyons of the San Juan River country in a vain search for the lost Merrick-Mitchell mine.

One of those who came to the Southwest to search for the lost mine was Cass Hite. Long ago seduced by the dreams of wealth possible only by striking it rich, Hite had prospected in Montana and Colorado before moving into Navajo country in the early 1800s. His search proved as fruitless as that of everyone else, but he had the good fortune to be befriended by Chief Hoskininni, who told him that he might find gold by moving west to the Colorado River. Following the revered chief's advice, Hite took the Mormon Trail from Bluff toward Glen Canyon and eventually worked his way to the river near the mouth of White Canyon, arriving there in September 1883.[20] He discovered gold in the gravels on both sides of the river and located more by exploring up and down the canyon. He named his new home Dandy Crossing, and he became a fixture on the river for decades before his death in 1914.[21]

When news of Hite's discoveries got out, a mild gold rush put miners and prospectors onto every gravel bar and side drainage of Glen Canyon. Dandy Crossing, which was the only really accessible ford of the river for many miles in either direction, became a small village (named Hite) complete with its own store and post office. The initial rush of gold fever lasted about seven years, but shortly after activity subsided in Glen Canyon it flared along the San Juan. Paying quantities of gold were found there in 1892, and the "Bluff Excitement," as it was called, lasted until about 1902. Meanwhile, a new rush of prospecting raised the level of activity in Glen Canyon to a new high. In fact, from 1893 to 1903 mining activity along the Colorado River was as intense as it would ever get, but even then it is doubtful whether there were ever more than a thousand men in the canyon at any one time.[22]

Gold mining in Glen Canyon was never particularly profitable. It was possible, if one worked hard enough, to scratch out a living there, and some men did just that in order to support families when the farms around Blanding and Monticello were struck with frost or blight. The problem was that the gold was all placer gold and so fine that it washed right out of the pan with the mud and sand. Hoping to find the source of the mineralization, prospectors wandered up each side drainage of Glen Canyon and poked into every crevice, all without success.

Most men who prospected in the canyonlands lost nothing but time and a lot of shoe leather, but Glen Canyon was also the site of one of the most spectacular financial failures in mining history. Robert Brewster Stanton of railroad survey fame had noted the activity in the canyon during his 1889 voyage down the river and had talked with Cass Hite and a few others. In 1898 he was back in the canyon with a scheme worthy of a true visionary. He staked 145 claims along the whole river from Hite to Lees Ferry and then had an entire dredge shipped piece by piece in wagons and reassembled in the canyon near Halls Crossing. His plan was to have the dredge ply up and down the river scooping up the sand and extracting the gold. However, the fine gold dust defeated even this piece of complex machinery, and the contraption ended up costing more to run than the value of gold it was extracting. In midsummer, 1901, it ceased operation and the dredge was abandoned in midstream. The operation lost $100,000.[23]

In the end the gold of Glen Canyon defeated all attempts to extract it profitably, and not long after the turn of the century virtually all mining activity had ceased. When the Kolb brothers passed down the canyon in 1911 during their dramatic reenactment of the Powell Expedition they encountered only a few scattered individuals.[24] From the standpoint of Rainbow Bridge, what is truly surprising and a bit enigmatic is that, in spite of this considerable activity, the great rock rainbow, located only a few easy miles from the river, remained unmentioned and unknown. It is scarcely credible to believe that no prospector ever wandered up Bridge Creek from the river, especially in view of the short distance and lack of obstacles, but it is equally incredible to believe that such a find would remain unspoken among what must have been a fairly close-knit and insular community of prospectors. Some have contended that the bridge was visited by numerous white men during the mining and prospecting days of the late 1800s, and perhaps earlier, but that men in search of minerals had little use for scenery and simply ignored the bridge or just forgot to mention it.[25] Such an assertion is belied by the fact that other scenery of much less splendor did rate a mention by the very men thought to have ignored Rainbow Bridge.

In September 1883, Cass Hite and a group of other prospectors discovered three natural bridges in

the upper reaches of White Canyon.[26] Word of the discovery spread quickly among the ranching and mining families in the vicinity of Bluff, and the attention of the scientific community was aroused. The discovery was announced to the world in August 1904 through the pages of *Century Magazine* and in September of that same year by *National Geographic*. These articles mentioned cliff dwellings in the area, thereby prompting the University of Utah and the Archeological Institute of America to launch an expedition during the summer of 1907 to study the White Canyon bridges and to explore the country north of the San Juan River. The expedition was led by Byron Cummings, then dean of the School of Letters and Science at the University of Utah.

Byron Cummings, pioneer American archaeologist and a man of unimpeachable character, was born on September 20, 1860, in Westville, New York. He was educated at the colleges of education in both Potsdam and Oswego, New York, before earning his M.A. at Rutgers in 1892. He earned his living by teaching mathematics, Latin, and Greek in the secondary schools of New York and New Jersey before coming west to take up an appointment as instructor of Greek and Latin at the University of Utah in 1893. He was made full professor and chairman of the Department of Ancient Languages and Literature in 1895, and became dean of the College of Arts and Sciences in 1905.[27] His rapid rise up the academic ladder bespeaks a man of considerable academic talent and leadership ability, and, concluding from his popularity with colleagues and students, a person of great personal warmth and humanity. His pupils on the archaeological digs simply referred to him as "the Dean," a title he carried with him throughout his academic career.

It is not known what or who might have piqued his interest in southwestern prehistory, but in 1906 Cummings traveled alone into Nine Mile Canyon in eastern Utah's Carbon County, the location of a great many intriguing pictograph and petroglyph panels. From that point on the subject of archaeology became his passion, and all other academic pursuits were abandoned. He spent weekends, holidays, vacations, and sabbaticals in the scorching heat, bitter cold, wind, and rain seeking knowledge of the ancient inhabitants of southern Utah and Arizona and revealing them bit by bit to the modern world.

Byron Cummings and his crew of student volunteers from Salt Lake City completed the survey in White Canyon that same summer (1907) and sent a report on their work to the General Land Office, the precursor of today's Bureau of Land Management. Established by Congress in 1812 as an arm of the Treasury Department, the GLO was charged with all matters relating to the administration of the public domain.[28] This was, it may be noted, nine years before the creation of the National Park Service and the same summer in which Congress passed the Antiquities Act, which gave presidents the authority to set aside designated tracts of land as national monuments. The Cummings report was the basis for the proclamation of Natural Bridges National Monument on April 16, 1908, by President Theodore Roosevelt, the first reserve of federal land for park or monument purposes in Utah.[29]

For some reason, now obscure, the GLO was not satisfied with the Cummings survey and, in 1908, sent its own team to Natural Bridges for a new look around. This new survey prompted the inclusion of more ruins, a renaming of the three arches from Edwin, Caroline, and Agusta to Sipapu, Kachina, and Owachomo, and a new presidential proclamation accomplishing the changes (September 1909). The leader of the survey crew was William Boon Douglass.[30]

Douglass had been born at Corydon, Indiana, on June 30, 1864. After graduating from high school there in 1882 he took a two-year course in civil engineering at Indiana University, and then read law in the offices of his father, Judge Benjamin P. Douglass. He passed the bar of the Harrison Circuit Court in 1885 and became deputy prosecuting attorney in the Third Judicial District of Indiana. He seemed a bit restless with the law, for in 1886 he was appointed surveyor of Harrison County. Soon thereafter, however, Douglass was back reading law, this time at Georgetown University, from which he received a master of laws degree in 1888. From there he went to work as a clerk in the General Land Office, then to a computer position in the Census Bureau, and finally back to the GLO as U.S. inspector of surveys in 1904. His first assignment was to settle a dispute between the state of Minnesota and a number of Indian tribes as to timber rights. In 1906 he did a location survey of Multnomah Falls in Oregon, and in 1907 he surveyed in Crater Lake National Park. By 1908 he was in the Southwest where he was to spend the better part of the next twenty years.[31] Interestingly, Douglass's report on his survey of Natural Bridges

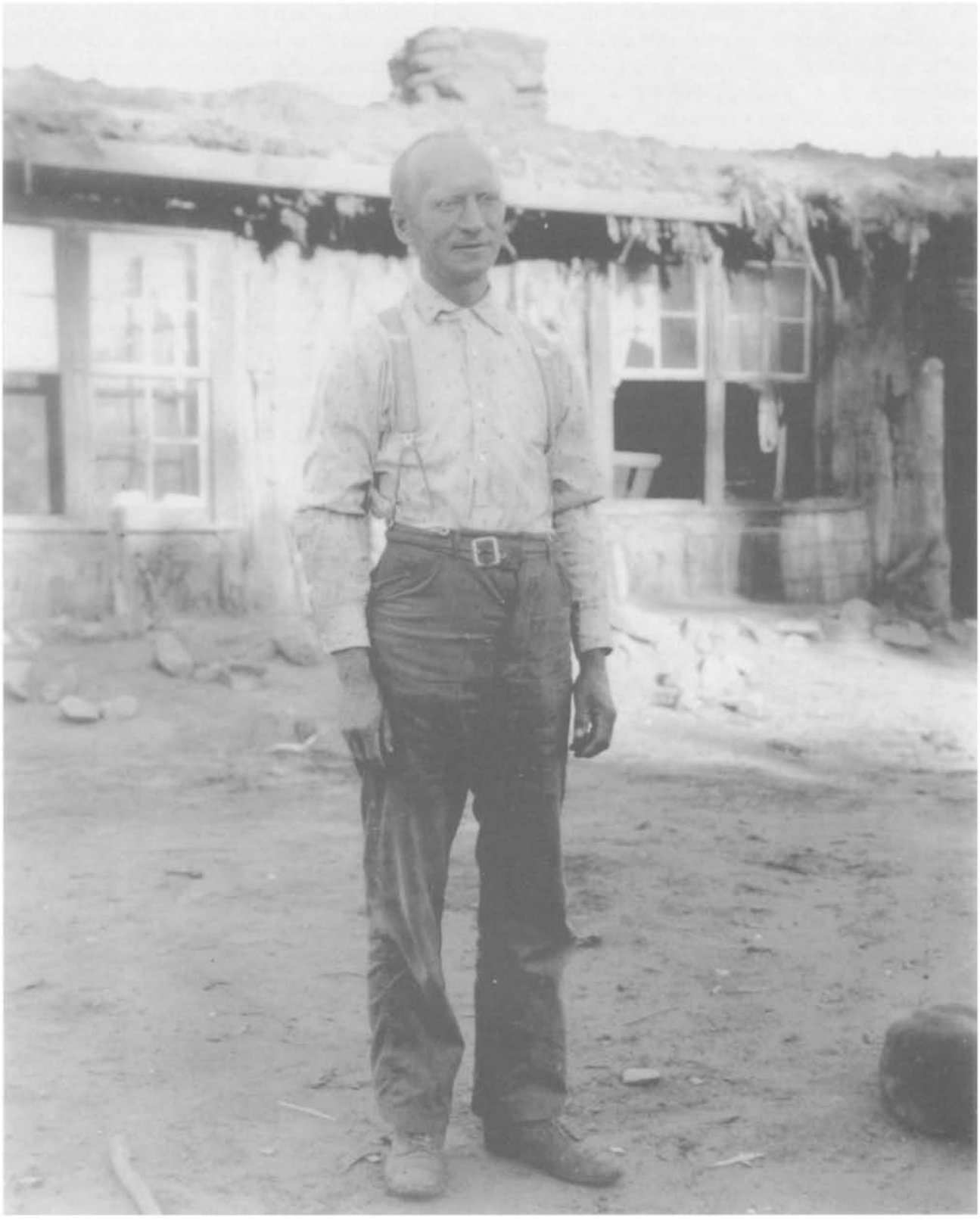

Figure 14: Byron Cummings at Oljato, 1909. Probably the first non-Indian to see Rainbow Bridge.

National Monument makes no mention whatsoever of the Cummings survey the previous year. From this, and in light of subsequent events, it would seem obvious that early on William Douglass had a certain animosity toward Byron Cummings. The origin of this bad feeling is difficult to determine, as the two would not even meet until August, 1909. Whether resulting from professional jealousy or some imagined slight, Douglass's feelings toward Cummings would go on to color the Rainbow Bridge discovery and create sparks for years thereafter.

His reconnaissance in Nine Mile Canyon and the survey in White Canyon had only whetted Byron Cummings's appetite for archaeology, and in the summer of 1908 we find him again in southern Utah, this time digging on Alkali Ridge near Montezuma Creek east of Blanding.[32] He was accompanied as usual by a select group of students from the University of Utah intent both on scientific research and enhancing the university's collection of southwestern artifacts. Cummings's level of knowledge concerning proper excavation techniques at prehistoric sites is difficult to determine with any precision. This certainly was not his academic specialty, but the science of archaeology, at least in America, was at this early date primitive at best, and he seems to have been able to get the proper permits from the General Land Office. When the work on Alkali Ridge was finished, Cummings and his crew packed up and rode west toward Bluff. He had an appointment to meet John Wetherill and, as it turns out, a rendezvous with destiny.

John Wetherill was born in 1866 on an island in the middle of the Missouri River.[33] His father, Benjamin K. Wetherill, was appointed government trail agent for the Chisholm Trail, and so the family moved that same year to the trailhead at Leavenworth, Kansas. A few years later we find Ben and his family farming along the San Juan River near Bluff, but the relentless cycles of drought and flooding forced the family off their land and into western Colorado. Hence, by the late 1870s the Wetherills were farming in Mancos, Colorado, at the foot of Mesa Verde. In 1888 John's brother, Richard, discovered Cliff Palace in what would later become Mesa Verde National Park, and the interests of the family, at least those of their sons, changed from farming to artifacts and archaeology. Collections accumulated by the Wetherill brothers from the canyons around their home were sold to private collectors and museums all over the country, adding a bit to the family's economic base and establishing their place in history. Although often denigrated as pot hunters or worse, the Wetherills actually excavated their finds with a great deal of care and precision and kept meticulous notes. For example, during an 1893 expedition to Grand Gulch in southeast Utah, John and Richard found a number of burials accompanied by baskets instead of pottery. Recognizing that they had uncovered a culture more ancient and primitive than the cliff dwellers, they called them the Basketmakers, a name still in use today.[34]

In 1896 John Wetherill both lost his father and gained a wife. His marriage to Louisa Wade, also of Mancos, prompted him to give up full-time archaeology and return to farming, but his bad luck and, perhaps, his lack of skill doomed his career as a farmer. Three successive failures with his wheat crop, caused in turn by frost, drought, and rust, convinced John that he would never earn his way in the world by farming, and so in 1900 the young family, now augmented with a son and daughter, packed their belongings and moved west.[35]

Louisa Wade Wetherill had been born in the mining camps of Nevada around 1877.[36] Her father, Jack, by turns a miner, frontiersman, and rancher, finally settled his family in the Mancos Valley in 1879, just about the time the Wetherills were also settling in. Louisa grew to be a tall, thin, comely girl, and John was attracted to her almost upon his first notice. They were married on March 17, 1896, and on December 28 of that same year little Benjamin was born. Georgia Ida came next on January 17, 1898, and their family was complete. A way had to be found outside of farming to support this energetic brood.

John's first job upon leaving Mancos was the management of a trading post at Ojo Alamo on the eastern fringes of the Navajo Reservation. It was owned by the Hyde Exploring Company, which wanted John to do archaeology while Louisa minded the store. This arrangement was working fine until Louisa's brother, John, who had come to assist at the trading post, caught pneumonia and lay for a time at death's door. Alone and unable to communicate with any of her neighbors, Louisa was near to panic. Her brother later recovered, but the experience taught her an invaluable lesson—if she were to remain in this country she would need to learn the language and customs of the Navajo. She was not only an able and willing student, but a loving and compassionate friend as well. Called by the Navajo "Aston Sosi" (Slim Woman), her neighbors came to revere her as

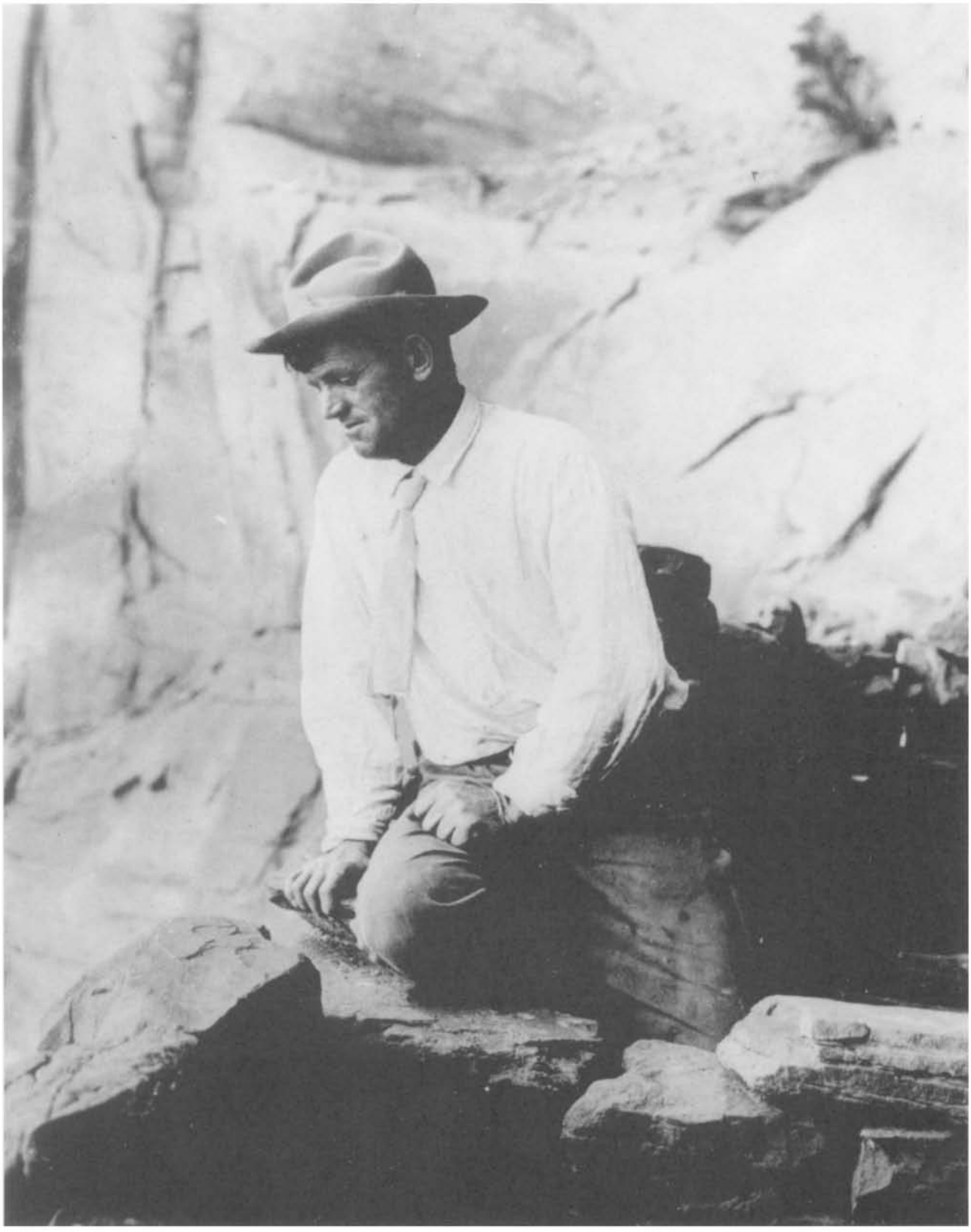

Figure 15: John Wetherill at Betatakin, 1912. Explorer, Indian trader, and first custodian of Rainbow Bridge National Monument.

Figure 16: Louisa Wade Wetherill. The first white person ever to hear of Rainbow Bridge.

a healing angel and sweet-spirited companion. Both Hosteen John and Aston Sosi were known to be fair and generous people whose word was as good as hard currency.

The Hyde Exploring Company pulled out of the area in 1902, leaving John and Louisa to run the trading post on their own. Things went along well enough for a time, but John Wetherill grew restless and figured he could do better elsewhere. In partnership with Clyde Colville and John Wade, he set out in February, 1906, to find a new home. He found it on March 17 at an oasis on the western edge of Monument Valley called Oljato—the Place of Moonlight Water.[37] At first the local Navajos were adamantly opposed to having any whites in their midst, and it appeared that the traders would have to move or be killed. John Wetherill, however, figured he had as much right as the next man to settle where he chose, and by standing his ground he soon won the grudging acquiescence of Chief Hoskininni and his son, Hoskininni Begay. It was a decision that neither side would ever regret. While Louisa, her brother, and Clyde Colville ran the business of a thriving trading post, John was back out in the field continuing in Tsegi Canyon the work he had begun at Mesa Verde.

Wetherill had been guiding scientific and archaeological expeditions into the heart of the Colorado Plateau ever since he left Mancos, and he was known to be an expert wrangler and knowledgeable guide. Hence, there was nothing very unusual in his being asked to guide a party from the University of Utah into the virgin archaeological territory of northern Arizona. By prior arrangement he met Cummings at Bluff and then guided them south toward his new trading post. Neil M. Judd, one of the student members of the expedition describes their journey:

> Wetherill was in a hurry and we traveled fast. We forded the river (the San Juan) at the mouth of the Chinle; overtook and passed a company of U.S. Cavalry just beyond Gypsum Creek, and reached Oljato the second day. Wetherill guided us to Segihatsosi and then to Segi. We saw numerous caves and cliff dwellings, visited most but did no digging.[38]

The Tsegi ruins had been seen ten years earlier by Richard Wetherill and Charles Mason, but Cummings was the first archaeologist to visit them. The sight of the great silent city of Keet Seel must have been absolutely overwhelming, certainly more spectacular than any ruin he had visited previously. William Douglass, whose headquarters were at Bluff, learned of Cummings's explorations and made a report on them to the GLO. Douglass's report was the basis of President Taft's proclamation of March 20, 1909, creating Navajo National Monument.[39] There were now two national monuments on the Colorado Plateau, and Douglass and Cummings were instrumental in creating both. There was to be yet one more.

Sometime in 1907 Louisa Wetherill learned of a great rock arch somewhere in the canyons behind Navajo Mountain. The One-Eyed Man of the Salt Clan had just returned from guiding a party of whites to the recently discovered arches in White Canyon, probably at the direction of John Wetherill, and he inquired of Louisa why men would make such a long journey just to gaze at rocks. Louisa replied that to her people such things were incredibly beautiful and that there were no other bridges like these in the world. The old Navajo scoffed at her lack of knowledge and replied,

> They are not the only bridges in the world. We have a better one in this country. It is in back of Navajo Mountain. Only a few go there. They do not know the prayers. They used to go there for ceremonies, but the old men who knew the prayers are gone. I have horses in that country, and I have seen the Bridge.[40]

This revelation caused quite a stir at Oljato, and John Wetherill secured a promise from the Salt Clansman to guide him to the bridge. However, during the winter of 1907–1908 the Navajo discoverer of Rainbow Bridge died. The Wetherills probably knew most of the Indians living in the Navajo Mountain region, and by diligent inquiry they found another guide, the Navajo singer Hosteen Luka, who said he knew the way. Early in 1908 they set off for Navajo Mountain and actually made it as far as Beaver Creek (Cha Canyon). At that point the guide proved less knowledgeable than advertised and the trail through the slickrock domes proved impossible to find. After one of their pack animals tumbled down a steep slope, scattering their meager supplies, they decided to return to Oljato and await a better opportunity.[41]

In August, 1908, the Wetherills told Byron Cummings about the Salt Clansman's tale of the great arch. With the proviso that a reliable guide be found, the Dean proposed an expedition for the following June, when he planned to be back in the area for another season of excavation in Tsegi Canyon. He was

able to finance such an expedition from funds provided by the University of Utah and the Archeological Institute of America, for he had been authorized to not only excavate but to explore the country as well. John Wetherill accompanied Cummings back to Bluff, from whence the Utah party was scheduled to return to Salt Lake City, both men already looking forward to the next season of digs and discovery. It would prove to be a momentous summer.

In the meantime William Douglass had also learned of the bridge. It was during the summer of 1908 while he was engaged in the resurvey of Natural Bridges National Monument that a young Paiute whom he had employed as an axman described a great arch near his home south of the San Juan River. He demonstrated its shape by means of a stick bent so that both ends were stuck into the ground, and he told Douglass that he could guide him to it. Douglass communicated this information to the commissioner of the General Land Office by letter on October 7, 1908. It said, in part:

> I have had in my employ a Paiute Indian named "Mike's Boy." He informs me that a larger and prettier natural bridge [exists] about 80 or 100 miles west of Bluff. That the bridge is a white sandstone like a rainbow more delicate . . . than the Augusta Bridge. Mike's Boy says that no white man has ever seen this bridge and that only he and one other Indian know its whereabouts . . . I have secured a promise that nothing be said about it.
>
> This could be investigated by me after disbanding my party . . . and I strongly recommend that such an investigation be made.[42]

Douglass received a reply from Washington dated October 20, 1908, authorizing him to undertake the suggested expedition and to segregate the enclosed lands. Douglass was off and running.

He made arrangements with Jim Mike to meet him at Oljato and left Lake City, Colorado, on November 27, 1908, with two chainmen, reaching Bluff on December 2 and Oljato at noon, December 4. Apparently, Douglass intended to hire Wetherill to outfit an expedition to the bridge and use Mike's Boy as a guide, but several factors conspired to prevent the expedition from ever taking place. First, Mike's Boy failed to appear at Oljato, and was instead waiting patiently for his boss near Bluff.[43] Second, Wetherill had insufficient livestock and supplies to mount a major exploring expedition, particularly in the winter, and announced that he had no immediate prospect of resupply. The final blow was received on December 8 when Clyde Colville arrived from the south and reported that the trails to the Tsegi ruins and Navajo Mountain were blocked by snow.[44] Clearly, the project would have to be put off until spring.

It also seems that at this time Wetherill and Colville deliberately gave Douglass some misinformation about the bridge. Douglass relates that these men discounted his information about a large stone arch behind Navajo Mountain and insisted that Mike's Boy was either fabricating a story or simply misinformed. Instead, they reported that the local Indians knew of a large arch in Navajo Canyon.[45] It is obvious that by this time both Wetherill and Colville knew about the bridge and its approximate location, so it is difficult to understand why they misinformed Douglass. Several explanations are possible, among which is that they simply took an instant dislike to him and preferred to have the more agreeable Cummings be the first to see the bridge. Another possibility is that Wetherill himself wished to be the discoverer but in the end found neither the time nor the resources to get there on his own. Either way, this lie and the flow of subsequent events convinced Douglass that he was the source for Cummings's and Wetherill's knowledge about the existence of Rainbow Bridge. He went to his grave believing that he alone should be given credit for the discovery.

For Byron Cummings the summer of 1909 would be a momentous one, and he seemed to realize it early on. He finished his teaching and administrative duties in late May, acquired a sabbatical for the fall, and headed for northern Arizona as soon as was practical, this time accompanied by three University of Utah students and his own eleven-year-old son, Malcolm. The party left Salt Lake City by train on Monday, June 7, and arrived in Thompson at 4:30 A.M. the next day. They then took the stage to Moab, where they spent two days waiting for luggage, and then headed south toward Bluff and beyond. They crossed the San Juan on Thursday, June 17, and arrived in Oljato on June 19 itching to begin excavation.[46] The party was outfitted at Wetherill's trading post and by June 22 they were in the field at Segie-ot-Sosie (Narrow) Canyon in Monument Valley.

One member of the party new to excavation that year was Stuart M. Young, grandson of the Mormon

leader, Brigham Young. Stuart was nineteen at the time and a student of mechanical engineering at the University of Utah when he heard around campus that Byron Cummings was forming a new team to excavate Anasazi ruins in southern Utah and northern Arizona.

> "I wanted to go along with the expedition, so I applied as a photographer, a hobby I had practiced for several years. I carried my bulky camera and equipment in a knapsack on my back throughout the trip that summer."[47]

The presence of a camera on that expedition was to have a lasting consequence. Young's skillful use of the cumbersome machine secured his enduring place in history at Inscription House, Betatakin, Keet Seel, and Rainbow Bridge.

The plan Cummings had formulated was to excavate in Segie-ot-Sosie until mid-July and then mount an expedition to search for that great arch. During the winter of 1908–1909 the Wetherills had located two Paiute Indians, Nasja and his son, Nasja Begay, who lived near Navajo Mountain and who claimed to know the location of the bridge and the trails to it. Old Nasja was too advanced in years to join the expedition himself, but he assured John Wetherill that his son would serve as guide. Cummings was anxious for a look at the mythical stone structure, but his passion for archaeology put his fieldwork ahead of his desire to explore. Meanwhile, William Douglass was in western Colorado surveying the Durango reservoir grant in the Needle Mountains, while Wetherill and Colville were tending to business at their trading post and making trips to Bluff and Gallup. For men supposedly engaged in a "great race" to discover Rainbow Bridge, an exploring party to do just that was not anyone's top priority.

Cummings broke camp in mid-July as scheduled and returned to Oljato. However, instead of making for Navajo Mountain, he and his archaeological expedition headed for Tsegi Canyon and the great stone ruin of Keet Seel. Cummings blames Wetherill for the delay and change of plan, while Wetherill blames Cummings.[48] Whatever the reason, the Utah Archaeological Expedition now settled into serious excavation work at a place which had been proclaimed a national monument barely four months previous.

When William Douglass heard about Cummings's work in Navajo National Monument, he turned livid. He fired off a letter from Bluff to Dr. Walter Hough of the U.S. National Museum expressing outrage at the Utahn's presumption:

> The *expected* has happened! I learn here that Prof. Hewett and Prof. Cummings went into the reserved ruins about six weeks ago, and as they have not come out I fear they are excavating.
>
> If any permit whatsoever was issued to them I feel certain it was done under a misunderstanding as to where they intended to work . . . I have just wired and written the General Land Office for authority to stop the work and prevent the removal of any archeological remains.
>
> P.S. Since writing the foregoing I have just seen Mr. Wetherill. He says that the GLO issued a permit to Prof. Hewett . . . He is not in the field now (in California) and Prof. Cummings is doing the work. He has obtained a very remarkable collection and unless stopped it will land in the museum of the University of Utah.[49]

The "Prof. Hewett" that Douglass referenced was Edgar Lee Hewett, director of research for the Archeological Institute of America and one of the country's foremost authorities on southwestern archaeology. He had been with the Cummings party when it left Salt Lake City, and, according to Stuart Young's diary, accompanied the Utah expedition to Oljato and beyond. Young writes that Hewett left Segie-ot-Sosie on June 25 for Gallup and the railroad, but before leaving, Dr. Hewett had undoubtedly set out the plan of research for Cummings and his students and certainly new where the excavations would be carried out. The permits issued by the GLO were valid and, in retrospect, the actions of Douglass in trying to get them cancelled looks to be pure spite.

John Wetherill had been forewarned of Douglass's intentions by means of a letter from Bluff, and he set out immediately for Douglass's headquarters to try to make peace between the two men. His motives are not hard to discern. Guiding both scientific and government expeditions in this remote corner of the West had become an important source of income for Wetherill and Colville, and the last thing they needed was a war between two factions of their customer base. Louisa Wetherill wrote that her husband's efforts were futile, and that he returned to Tsegi Canyon to disclose the bad news to Cummings and his party.[50] By prearrangement, Wetherill was to meet Cummings at Keet Seel with the supplies to mount

Figure 17: Stuart M. Young at Betatakin, 1909. Photographer and student member of the Utah Archeological Expedition.

an expedition in search of the rock arch, and, as the appointed time had arrived, Wetherill came to the archaeologist's camp ready for the journey. Word had already been sent to Nasja in Paiute Canyon to expect the expedition's imminent arrival and to have his son ready to serve as guide.

Byron Cummings was genuinely shocked that Douglass would go so far as to attempt cancellation of his excavation permits and confiscation of his artifacts. He was certain that this must be the result of a misunderstanding and was determined that a face-to-face meeting was the only solution. The opportunity for such a meeting was actually at hand, for another piece of news Wetherill brought with him to Tsegi was that Douglass was also mounting an expedition in search of the rumored arch and that his party was expected at Oljato in four days. Wetherill was certain that Douglass's guide would be unable to find the trail around Navajo Mountain, and that, in any case, the head start they already had guaranteed them victory in the contest for discovery. He therefore urged Cummings to take the expedition west according to the original plan. However, the Dean would have none of that. As he was later to write:

> He [Wetherill] brought with him a letter from a friend of ours in Bluff that a deputy surveyor of the U.S. Government, one W. B. Douglass, was telegraphing back to Washington seeking to get our permit for archeological investigation annulled. We thought this a strange procedure, and, thinking that any government representative would be a reasonable man, we decided to turn back to Oljato and await the arrival of Mr. Douglass to find out if possible what was the trouble.[51]

Hence, on or about August 8,* over John Wetherill's very vocal objections, the Utah Archaeological

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* At this point the chronology as recorded by the eyewitnesses begins to break down. Wetherill gives the date of August 9 for the discovery of Betatakin, which means that the Utah Archaeological Expedition could not have reached Oljato before evening on that date. Stuart Young's diary lists August 11 as the date the expedition set out for

Expedition turned back to Oljato. However, before leaving the area the party had one bit of unfinished business. The Wetherills had heard Navajos in the area tell of a second large Anasazi ruin in the Tsegi, and so John Wetherill got Cummings to pay Clatsozen Benully five dollars to guide them to it. In less than half an hour the party was standing beneath Betatakin.[52] Cummings had discovered Inscription House earlier that summer and was now able to add this magnificent structure to his list of accomplishments.

Cummings very much wanted to confront Douglass over the excavation permit issue, but apparently his patience had a limit. The party determined to wait until the afternoon of August 10 and then set off for Navajo Mountain, Wetherill being uncertain how long Nasja Begay would wait. In his diary entry for that date, Stuart Young writes:

> The morning was spent getting things ready, with the idea of starting for Navajo Mountain just after dinner. While we were eating, an Indian came to the window and told us "Pelicano come." It proved to be Douglass and his party. The professor stopped and asked him to come with us, as it was also his intention to find the Bridge. Because of this delay, etc., we did not get started till 5:00 . . . Douglass' party was pretty slow and we were held back all the time by them.

The expected confrontation between Douglass and Cummings over the excavation permit never materialized. By this time Douglass must have realized that he was seriously in the wrong over the issue and probably did not wish to argue a losing case. However, his growing antipathy towards the Dean could not be hidden. Cummings was later to write:

> Mr. Douglass was very noncommittal about what he had been doing or trying to do. He was very condescending toward our party, said he was going to find the big arch he had heard about, that his Paiute guide, Mike's Boy, knew the country, had been to the bridge, and that we might go along if we wanted to. A wonderful privilege under the circumstances.[53]

Because of the late start, the first night's camp was only a few miles north of Oljato near Hoskininni Mesa in Monument Valley. On August 11, however, the expedition was up at 4 A.M. and riding at a brisk pace down Copper Canyon toward the San Juan River. The combined parties at this point numbered twelve men. The Utah Archaeological Expedition consisted of Cummings, Young, Neil M. Judd, Donald Beauregard, and Malcolm B. Cummings. The government party was made up of Douglass, John R. English, F. Jean Rogerson, Daniel Perkins, John Keenan, and Mike's Boy. Cummings had hired a Navajo, Dogeye Begay, who was also familiar with the Navajo Mountain country, to assist with the horses and gear, and it was he who rounded out the party.

In Wetherill's day the route down Copper Canyon was a fairly well-used wagon road which led to several mining operations along the San Juan. For about ten miles it wound through western Monument Valley, past Organ Rock and Jacobs Monument before plunging into the narrows between No Mans Mesa and Monitor Butte. At the mouth of the canyon the wagon road followed a bench above the San Juan River west to the mouth of Nokai Canyon.[54] Their second camp was made a short distance up this canyon near some water pockets. It had been a long, hot day in the sand and rock in country totally devoid of water, and, to add inconvenience to misery, they arrived at camp to discover that one of the pack animals had thrown a shoe. No one had thought to bring a shoeing outfit, so Wetherill had to improvise using nails from an old tomato carton.[55]

The next day, August 12, was to be a critical day for the expedition. The route out of Nokai Canyon led to the summit of Paiute Mesa by a steep and precarious trail which hugged the side of the mesa all the way. Judd reports that at several points some of the less experienced pack animals had to be unloaded and led up the trail.[56] Once across Piute Mesa the trail led down into Paiute Canyon and past the green fields and cornstalks of Nasja's farm. The father was at home in his hogan, but his son had tired of waiting and had gone off to the summer pastures with the family's sheep and goats. The old man promised to send for his son immediately and then worked out with John Wetherill a general outline of the route ahead and an expected rendezvous with his son. Hosteen John was certainly familiar with the country up to this point, but from here the route would be

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Rainbow Bridge, a clear impossibility if the bridge was reached on August 14. This latter date is one all agree upon, so the expedition must have left Oljato on August 10. Judd states that the party waited two days at Oljato for Douglass, which, if true, means that Cummings must have been at Oljato on August 8 at the latest.

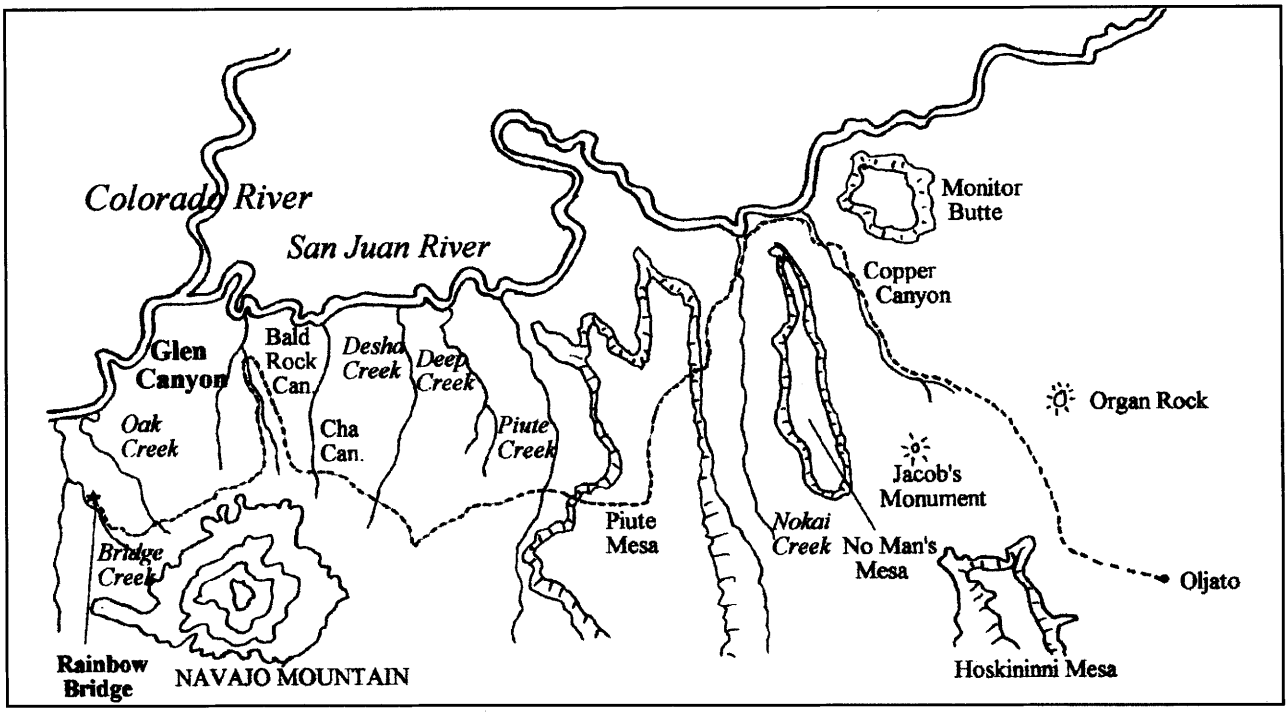


Figure 18: The route of the Cummings-Douglass Expedition from Oljato to Rainbow Bridge is shown. For much of the way the country was largely unexplored and uninhabited.

across trackless slickrock waste about which Wetherill had only a cursory knowledge.

After a lunch of melons and Indian fry-bread the expedition climbed a short, steep incline up a tributary of Piute Canyon and onto the Rainbow Plateau. At this point the expedition was on the north side of Navajo Mountain and heading nearly due west. Had they known where they were going it would have been an easy ride to Bridge Canyon, but this group clearly did not know where it was going. It became apparent early on that neither Mike's Boy nor Dogeye Begay knew the route ahead. In fact, Dan Perkins, axman and flagman of the Douglass party, states flatly that Mike's Boy had heard of the bridge but had never seen it.[57] Fortunately, the first few miles across the plateau were relatively easy, and the party headed Deep Creek and Desha Creek, towards evening sliding into camp along the shaded banks of Beaver Creek (Cha Canyon) near where the modern trail to Rainbow Bridge begins. Camp that night must have been an anxious one, as the guide Douglass had hired was clearly out of his element and Nasja Begay was still many miles away. In addition, Douglass's horses were not used to such rugged country and were already in a bad way. In fact, according to Malcolm Cummings, William Douglass had already concluded there was little point in continuing and was in the mood to turn back.[58] However, the Dean and John Wetherill were not similarly discouraged and expressed their intention to press on and find the arch, if, indeed, such a thing actually existed.[59] Wetherill told Douglass it would take longer to find the arch without a guide, but, with or without Nasja Begay, he intended to continue.[60] To Douglass this sounded like a challenge he was in no mood to decline, but in order to follow Wetherill he knew he would have to make the load lighter for his horses. Consequently, his party jettisoned about half their gear before mounting up the next morning.

The Indian guides were likewise discouraged and resistive. Mike's Boy told Wetherill that the white men's ponies could not make it beyond Beaver Creek and that it was useless to continue. Wetherill answered their fears with ridicule and appealed to their pride by threatening to tell their neighbors that their nerve failed them when white men remained steadfast. In the end, the expedition remained intact, but it took all the persuasive skill Wetherill possessed in order to keep it so.

August 13 proved to be exhausting, psychologically devastating, and dangerous. The country was

largely slickrock, domes of Navajo Sandstone which had to be traversed blindly and which often led to steep pitches down which the exhausted horses slid in terror. The largest obstacle in their way was the huge defile known today as Bald Rock Canyon. The modern trail, carved out by the Civilian Conservation Corps in the 1930s, crosses it easily high up near the foot of Navajo Mountain, but for some reason the discovery expedition turned down-canyon and were unable to cross until it widened near the present high-water shoreline of Lake Powell. Once across, the party had little choice but to follow Bald Rock back up-canyon while searching for a way into and across Nasja Creek.

Finally, they located a narrow pass complete with an ancient trail leading down toward the little stream. Called today the Hoskininni Steps, the trail had been pecked into the slickrock, perhaps by the Navajo refugees seeking to avoid Kit Carson's troops. The trail was steep and precarious, however, and two of the horses, now being led riderless, panicked, left the steps, and tumbled their way to the bottom, baggage and all.[61] No permanent damage was done, but the strain was telling on both men and animals. Fortunately, when the creek was reached, the exhausted party found a well-watered basin, called Surprise Valley, which provided good camping and feed for the horses. A halt was called, and the horses were turned loose to rest and graze while the tired and discouraged men stretched out beneath the pinyon and juniper to contemplate their next move.

Judd describes the group that night as "tired and partially disheartened."[62] The August heat beating down on the treeless slickrock was nearly unbearable, the route so far unpredictable and treacherous, and the goal shadowy and elusive. Mike's Boy and Dogeye Begay were now close to asserting that the bridge, for which they had come so far, was a myth. Wetherill and Cummings believed that the great arch truly existed and that it was nearby, but how was it to be found? The canyon maze around them contained a hundred places that might hide the most massive of arches, and it was distinctly possible that they had passed it by already. The way ahead was totally unknown, and, while they had left Oljato well-supplied, they could not stay out in this barren and inhospitable country forever. As the men sat down to a supper of boiled rice, canned corn, Dutch-oven biscuits, and alkali-flavored tea, few of them were convinced there was any point in going further.

What occurred next is one of those unlikely but fortuitous miracles which seem to play such a large role in most discoveries—Nasja Begay rode into camp. How he was even able to locate the party in the thick darkness enveloping Surprise Valley is nearly unexplainable, and even more remarkable was his apparent ability to negotiate a tough trail in the gathering twilight. Nevertheless, there he was, as promised, and not a moment too soon. Donald Beauregard, one of the student members of Cummings's party, describes the scene:

> It was then (the night of the 13th of August) that Nashjaw Begay, . . . came up through the dark hugging our trail with a perspicaciousness that was long ago patented by the red man. After considerable hemming and bowing and a monotonous series of grunts we were informed that the bridge lay a half-day's ride ahead in a canyon that emptied into the Colorado and that he (Nashjaw Begay) would lead us there and out again for three silver dollars a day.
>
> That meant to us what rain means to wilted sunflowers, and we swung into the saddle next morning all expectation.[63]

Neil Judd relates that as the party broke camp on August 14 some of the men were whistling and spirits were high. There were eight miles of rugged country still ahead, but the party was now certain of its mission; there would be no turning back. The route they followed approximates the modern-day trail, which leads past Owl Bridge west of Nasja Creek, crosses Oak Creek high up near Navajo Mountain, and descends into Bridge Creek by a short, steep tributary on the east side. Cummings named this tributary Red-Bud Pass,[64] unfortunately the same name unwittingly used by Charles Bernheimer for the western route into Bridge Creek which he opened thirteen years later. (This duplication of names has been a source of much confusion among later writers commenting on the discovery.)

With the goal now in sight and the laurels of discovery virtually assured, the mood of William Douglass shifted dramatically. Heretofore pessimistic and reticent, he now began an enthusiastic dash for the bridge that was little short of amazing. In a report to the National Park Service written ten years later Neil Judd recalled,

> Throughout the last day's travel Mr. Douglass exhibited the uncontrolled enthusiasm of the amateur explorer and he was so utterly disregardful of possible danger to other members of the party as to

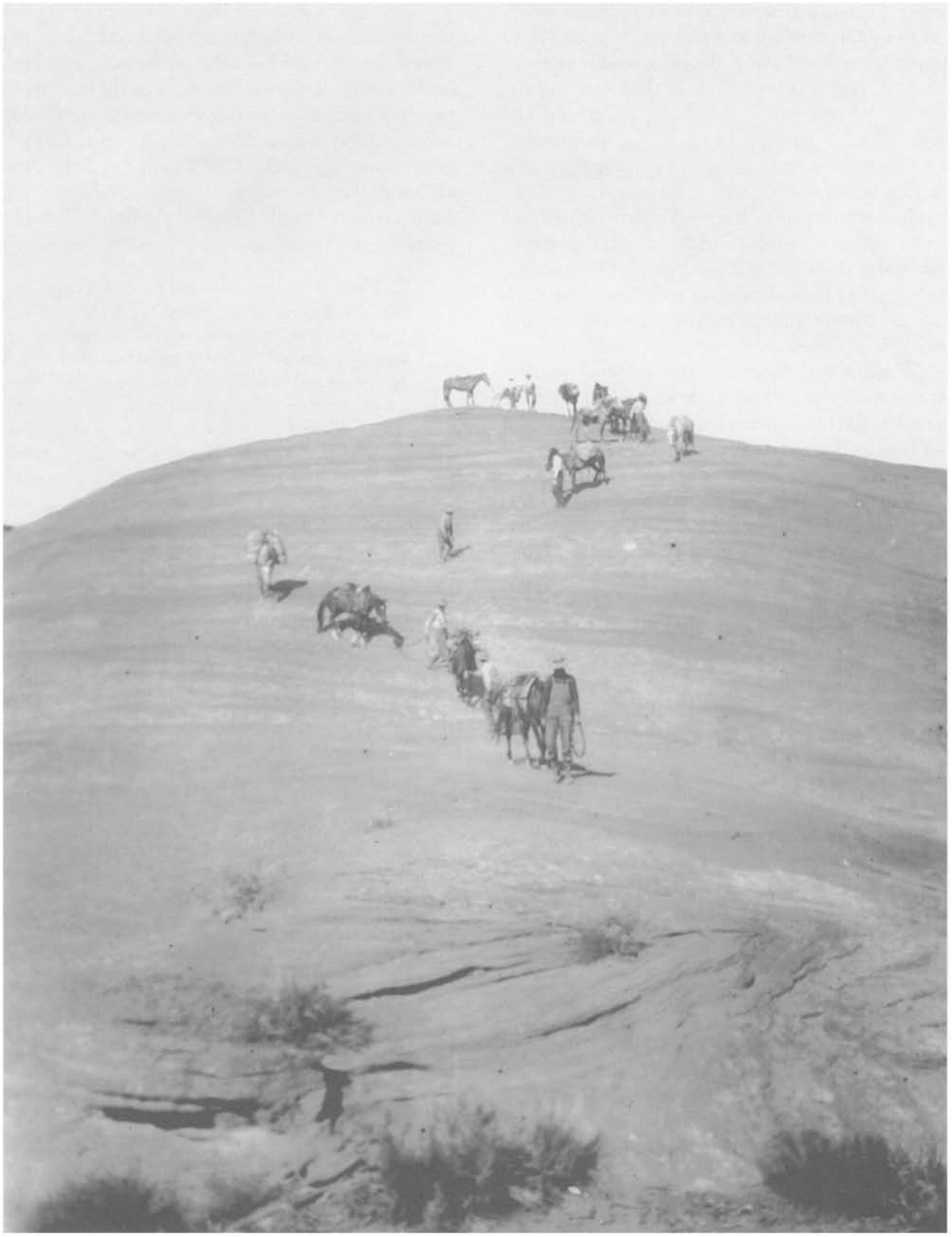


Figure 19: The discovery party descends into Bald Rock Canyon, 1909.

Figure 20: The discovery party descends the Hoskininni Steps, 1909.

> arouse the disgust of all. He seemed to lead the party and crowded the other riders from the narrow trail as he repeatedly forced his tired horse to the front. Mr. Douglass was the only member of the expedition engaged in this wild race . . .[65]

Douglass himself confirms his excitement on that final morning. Writing in his field notes in 1910 he states, "On the morning of the last day's travel we were told by the Indian guides that the bridge would be reached by noon, the excitement was intense. A spirit of rivalry developed between Professor Cummings and myself as to who would first reach the bridge."[66] Judd states that had Cummings known that there was a race between himself and Douglass he would have been the most surprised man in the world. However, Malcolm Cummings noticed that once the party reached the bed of Bridge Creek the pace noticeably quickened. He also notes that the descent down into Bridge Creek was precipitous and that the boulder-strewn floor of the canyon was hard on horses and riders alike. Judd recalls, ". . . that first trip through Rainbow Bridge Canyon stands out as the most trying I have ever experienced."[67]

William Douglass was setting the pace, determined to remain in the lead. To this end he rode his large roan horse mercilessly, keeping his eyes fixed straight ahead on what appeared to be a large, cave-like structure on the right. Close behind rode Cummings, Wetherill, and Nasja Begay, who pointed ahead and to the left indicating where the bridge would first come into view. Neil Judd describes the moment of discovery:

> . . . I urged the brown horse over the crest of a rounded knoll and saw Professor Cummings some rods in advance, suddenly draw rein and point down the canyon. Then Wetherill reached his side; they stood in silence as others gathered. Of course, I sensed that Nonnezoshe itself had at last come into view, and I am sure my rope plied the brown pack horse more vigorously than was necessary. I caught my first glimpse of Rainbow Bridge just as Mr. Douglass joined the silent group on the rim of the inner gorge. Never shall I forget that moment.[68]

The viewpoint from which Cummings first caught sight of Rainbow Bridge was a narrow one, and the impetuous Douglass had ridden right past it. His hearing was quite bad, so it took a good deal of shouting and waving to get him to turn around and retrace his steps. It was approximately 11 A.M. on Saturday, August 14, 1909.

Figure 21: The first photograph of Rainbow Bridge, August 14, 1909.

Both Cummings and Wetherill had dismounted and were leading their horses up the next incline, but Douglass, seemingly intent on reaching the bridge first, remained mounted and spurred his horse ahead. Wetherill, seeing what was about to happen, leaped on his horse and raced Douglass down-canyon. He was by far the better horseman and his mount better suited to the country, so John Wetherill stood alone for a few moments beneath Rainbow Bridge, the first white man to reach it.[69] Douglass and Cummings followed, in that order, to be joined shortly by the others as, one by one, they drifted down the canyon. Last to arrive was young Malcolm, who relates that by the time the others reached the bridge he was too tired to care whether he saw it or not.[70]

Camp was made at the bridge and the horses were turned loose to drink and graze at will. Judd states that most of the animals were now without shoes and their hooves were worn and bleeding. In fact, they were so weary that they did not go in search of grass until late afternoon.

About 3 P.M. Cummings, Judd, and Beauregard decided to hike down Bridge Canyon to the Colorado River, a distance they estimated to be about six miles. Even though they were fatigued from the long journey, they made the trip at a running walk, and by late afternoon reached the river at the mouth of Aztec Creek. Here they found some prehistoric Anasazi structures and pictographs together with a fair amount of debris left behind by prospectors, who had obviously used the good-sized beach for camping. They also found three names written in charcoal on the canyon wall.[71] The return hike was made in twilight and pitch-blackness. The walls of Bridge Canyon closed in to nearly the width of a man's reach, and the canyon bottom sheltered boulders and deep pools. The party banged knees and shins on the rock and stumbled into the pools, and so it was a bruised, soaked, and weary group that dragged themselves into camp about midnight.[72]

In the meantime Wetherill had found a way to reach the top of the bridge. Douglass states that he

Figure 22: The discovery expedition at Rainbow Bridge, August, 1909. Back row from left to right: Ned English, Dan Perkings, Jack Keenan, Vern Rogerson, Neil Judd, Don Beauregard. Front Row, left to right: Mike's Boy (Jim Mike), John Wetherill, Byron Cummings, William Douglass, Malcolm Cummings. Not shown: Nasja Begay, Dogeye Begay, Stuart M. Young.

scaled the walls of the cliff, but in all probability Wetherill found an ancient Anasazi pecked trail leading up the sandstone just a short way below the bridge. Once a sufficient height had been reached he contoured along a ledge until he was above the west abutment, from which he could then reach the top of the bridge by letting himself down with a rope.* The route was relatively safe, and the access it afforded enabled the government party to measure the dimensions of the bridge. Douglass relates that two steel measuring tapes with a combined length of 333 feet were lowered off the top of the bridge to the creek bed below, yielding a height of 309 feet.[73] The tapes were then stretched across the canyon from the east abutment to the west, yielding a span of 278 feet. (These measurements stood as official until 1978, when a resurvey showed them to be in error.)

The next morning Cummings and his party reached the top of the bridge by the same route and then began preparations for the return journey. A longer stay would have been desirable, but supplies were running dangerously low and the student members of the expedition needed to return to Salt Lake City and their university studies. Douglass needed another several days to complete the survey of what would become Rainbow Bridge National Monument, and then wished to go on to Tsegi to survey Navajo National Monument. Accordingly, Byron Cummings asked Neil Judd and Dogeye Begay to remain with the government party and guide them south via a

* Many visitors to the bridge followed Wetherill's route until the rising waters of Lake Powell cut off access to the trail.

shorter trail around the east flank of Navajo Mountain.[74] The remainder of the Utah Archaeological Expedition left Rainbow Bridge about noon and headed back the way they had come. Their supplies were exhausted within a day, so Cummings and Wetherill took the party back to Nasja's home in Piute Canyon hoping to purchase supplies. The old Paiute had nothing to offer but an aged goat and some ears of green corn. Beauregard states that the goat meat was virtually inedible, but that and some parched corn were all they had for the remainder of the journey. To add insult to injury the weather turned sour and rain poured down on the beleaguered group most of the way. The tired, hungry, and soaked expedition finally rode into Oljato four days after leaving the bridge.

Douglass and the government party, plus Judd and Dogeye Begay, remained through the next several days tying down the four corners of the proposed national monument. Douglass laid out the boundaries in the shape of a square a half-mile on a side with Rainbow Bridge approximately in the center. The resulting 640-acre plot became the basis for the presidential proclamation of Rainbow Bridge National Monument issued by William Howard Taft on May 30, 1910. It remains to this day exactly as Douglass surveyed it.

Another of Douglass's accomplishments was selecting a name for the bridge. He seems to have had a penchant for Indian names for southwestern features, as witnessed by his renaming of the three arches at Natural Bridges using Hopi terms, and he wished to do the same thing here. Wetherill had in mind the Navajo term *nonnezoshe*, which he had heard local Indians use in reference to the bridge. It literally means "lies side by side across" and is the term in Navajo for a log or plank bridge.[75] Douglass believed, perhaps rightly, that the term only applied to artificial bridges and rejected it.* He chose instead the Paiute word *barahoine*, which literally means "rainbow." In his field notes Douglass called the arch Barahoine (Rainbow) Bridge, but in Taft's proclamation only the English term was used.

Douglass finished his survey on August 17, and that evening his party ate the last of their supplies, one biscuit and a spoonful of beans per man.[76] On August 18 they broke camp and headed back to the Rainbow Plateau. They retrieved the supplies left behind at Beaver Creek, but even with that larder awaiting them, they still were without food for more than the day it took to reach it. They crossed the upper reaches of Piute Creek, rounded Navajo Mountain, and descended into the Tsegi via Bubbling Springs Canyon. The government party was encamped at Keet Seel by August 21, and Judd and Dan Perkins left for Oljato the following day.[77] The Utah party left Oljato for Salt Lake City on August 24. Cummings was on sabbatical during the fall quarter and so he stayed in the area until December, continuing his excavations at Betatakin and other sites in the immediate vicinity. Douglass finished his surveys of Navajo National Monument in early September and was back at his headquarters in Cortez by September 11.

Word of the discovery spread quickly. The *Montezuma Journal* of Cortez carried the story in its morning editions of September 2, as did Moab's *Grand Valley Times*. The *Deseret News* of Salt Lake City carried the report in its evening edition on the same date, and then did a feature article, complete with a photograph, on October 2. Perhaps the most famous report of the newly discovered arch was penned by Byron Cummings in the February, 1910 issue of *National Geographic*. The bridge which had lain hidden for so long was now known to the whole world.

What did the discoverers think of the great arch which had cost them so much anxious toil to reach? No one from the government party seems to have left any written account of his impression, but the Utah Archaeological Expedition was not so reticent. Neil Judd wrote in 1927,

> Nonnezoshe awes one into silence. I don't know why, but it does. Perhaps one is impressed there, as in other rare corners of the world, with the near presence of the Master Builder . . . Before such unmistakable evidence of the Supreme Architect one stands as in a temple.[78]

Stuart M. Young wrote in his journal,

> That which has been sought was found. It gives one a feeling of elation to be a member of a party that first beholds such a work of nature. There was excitement and scurrying to reach it. Even the animals seemed to feel that something unusual had occurred . . . The longer we stood and looked the more

* The Navajo term for natural bridges is *tsé nanʼahi* (rock extends across) but neither Douglass nor Wetherill seemed to know of this word.

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION

[No. 1043 – May 30, 1910 – 56 Stat. 2703]

WHEREAS, an extraordinary natural bridge, having an arch which is in form and appearance much like a rainbow, and which is three hundred and nine feet high and two hundred and seventy-eight feet span, is of great scientific interest as an example of eccentric stream erosion, and it appear that the public interest would be promoted by reserving this bridge as National Monument, together with as much land as may be needed for its protection;

NOW, THEREFORE, I, William H. Taft, President of the United States of America, by virtue of Section two of the act of Congress approved June 8, 1906, entitled. "An Act for the Preservation of American Antiquities," do hereby set aside as the Rainbow Bridge National Monument, one surveyed tract of land, embracing said natural bridge, containing one hundred and sixty acres of land, in square form, the southeast corner of which bears from mile post No. 179 of the Utah-Arizona boundary line, north sixty degrees and twenty-five minutes West, seven miles and sixty-seven and eighty-seven one hundredths chains distant, as shown upon the diagram hereto attached and made a part of this proclamation.

Warning is hereby expressly given to all unauthorized persons not to appropriate, injure or destroy any object hereby included in a National Monument, nor to settle upon any of the lands reserved and made a part of said Monument by this proclamation.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the city of Washington this thirtieth day of May, in the year of our Lord one thousand nine hundred and ten and the Independence of the United States the one hundred and thirty-fourth.

[SEAL]

Wm. H. Taft

By the President:

P.C. Knox

Secretary of State

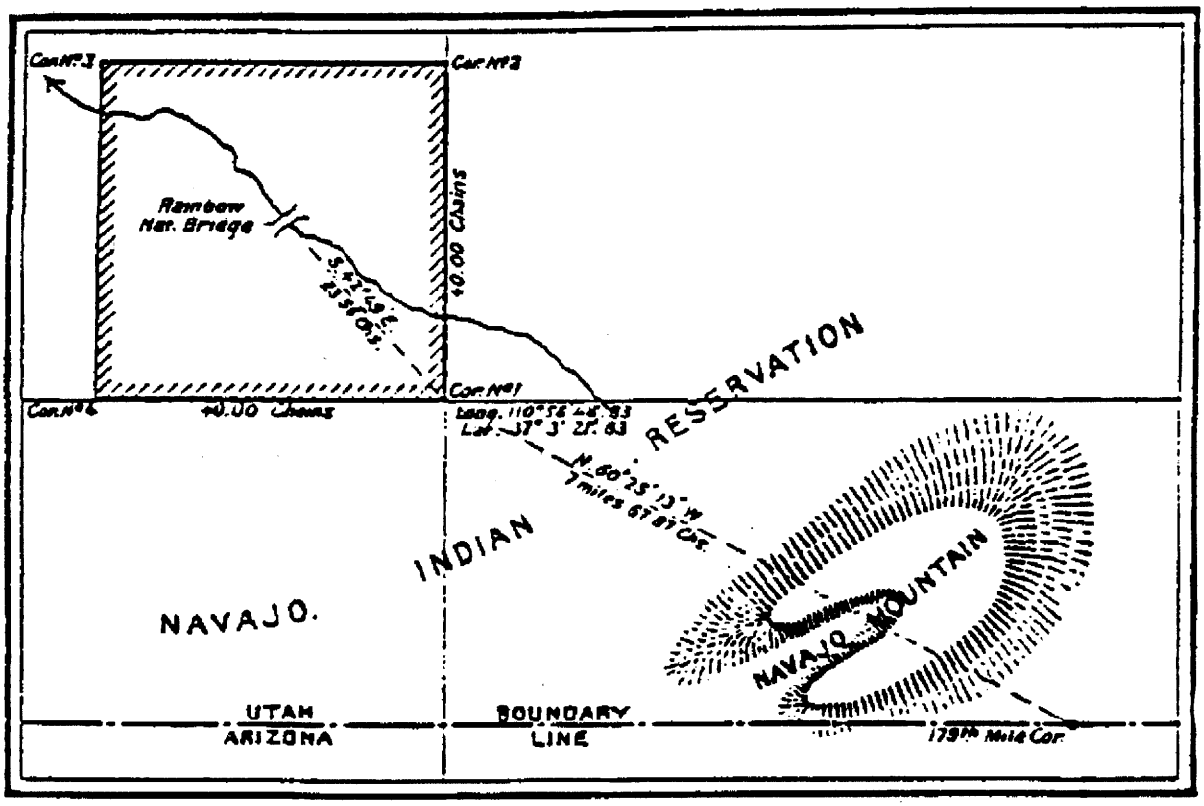
Figure 23: The proclamation issued by the president of the United States establishing Rainbow Bridge National Monument

RAINBOW BRIDGE

NATIONAL MONUMENT

UTAH

Embracing 160 acres of land in square form, the south east corner of which bears from 179th mile corner on the Utah and Arizona boundary, N. 60°25'13W. 7 miles 67.87 chs. distant,



DEPARTMENT OF THE INTERIOR

GENERAL LAND OFFICE

Fred Dennett, Commissioner

Figure 24: The map accompanying the proclamation establishing the boundaries of the national monument. It remains today just as Douglass surveyed it in 1909-1910

Figure 25: Rainbow Bridge, August, 1909, looking downstream.

> we realized how weak and frail a thing man is. That night we made our campfire beneath it.[79]

Byron Cummings wrote in a memoir published in 1952,

> We were all overwhelmed at the sight of this mighty towering arch that stretches its graceful curving sides across the canyon . . . Even then its towering arch is dwarfed by the bare sandstone cliffs that rise far above it on every side. The wealth of color reflected from the cliffs and the deep shadows of the gorges make you feel you are in some giant paradise of long ago . . .[80]

The regard these men had for the great arch is also attested by the number of return visits they made. Byron Cummings was back at the bridge in July, 1919, on August 3, 1920, and again in 1936. Neil Judd returned in 1923 and again in 1966, this last trip by boat on Lake Powell. William Douglass returned in the summer of 1910 for further survey work, but there is no evidence that he ever visited the bridge just for the pure pleasure of seeing it again.

So, who should get credit for the discovery of Rainbow Bridge? The opinion of most of the members of the discovery expedition was summed up nicely by Byron Cummings:

> I was the first white man to see the Rainbow Bridge and John Wetherill was the first white man to pass under this great arch. Its real discoverers were the two Paiute Indians, Noscha and Noscha Begay.[81]

The significant role played by Nasja Begay in leading the expedition to the bridge is attested by almost everyone who wrote about the discovery. Wetherill wrote that "the real credit belongs to the Paiute Nasja Begay, without whose knowledge of the trail the bridge would probably not have been discovered for some years to come."[82]

Only William B. Douglass refused to join in the chorus of praise for Nasja. In his field notes he

wrote, "To Jim [Mike's Boy] is due the credit of bringing to the world the first knowledge of this remarkable monument; to the General Land Office belongs the credit for the discovery to civilization and preservation as a National Monument."[83] No other testimony for the significance of Jim Mike's contribution can be found, however. Stuart M. Young wrote, "Douglass, with his Indian guide, stood small chance of finding it."[84] Wetherill was more blunt: "I do not feel that Jim is entitled to any credit whatsoever."[85]

The fact is that Douglass was totally convinced that credit for the discovery of Rainbow Bridge belonged to himself and to his guide, and he continued to assert his prerogative at every opportunity throughout his life. In 1916 Herbert E. Gregory had written a footnote on page 45 of the U.S.G.S. Water Supply Paper No. 380 stating that Wetherill had gotten his information on the existence of Rainbow Bridge from a "Paiute herdsman." Douglass, on seeing the note in its published form, immediately fired off a letter to the secretary of the interior complaining,

> Certain persons are trying to deprive the Interior Department and the General Land Office of the credit for the discovery of the world's greatest natural bridge, now the Rainbow Bridge National Monument . . . Professor Gregory was misinformed as to where Mr. Wetherill got his information. He received it from me in 1908, when in November of that year I stopped at his house at Oljato, Utah . . .[86]

A year later he wrote to the National Park Service his own version of the discovery expedition, in which he stated,"They planned to beat me to it but failed, as I reached it before Cummings. I made no effort to get in front of Wetherill any more than I did to get in front of the Indians. However, it never occurred to me that Cummings would attempt to take credit for the Bridge."[87]

Cummings continued to assert the prerogatives of himself and the Utah Archaeological Expedition but in a much more low-key and less obnoxious manner than Douglass. Judd, on the other hand, could be quite blunt in defense of his leader and friend. He described Douglass's continued assertions as a "pretty squabble" and asserted that Cummings had not and would not stoop to engage in it.[88]

In all fairness to Douglass, however, the information he was given on the fateful November night in 1908 led him to believe that, previous to his conversation with Wetherill at Oljato, the bridge was unknown to almost everyone except himself and Jim Mike. He was given to understand that the Wetherill-Cummings Expedition to the bridge was derived from his own, using information that he had willingly divulged, and that credit for the discovery properly belonged, therefore, with himself and the General Land Office. Apparently Wetherill never disabused him of this wrong impression, so Douglass went through life believing himself to be totally in the right. The Utah party likewise did not understand the origin of Douglass's mistaken impression and therefore considered him an egotist and a self-serving blowhard.

It is harder to explain Douglass's championing of Jim Mike as guide in the face of clear and convincing evidence that he had little to do with the discovery of Rainbow Bridge, and still harder to explain Douglass's hostility toward Byron Cummings. Douglass blamed Cummings for trying to deprive him of credit for discovering the bridge, for prematurely divulging information about the GLO survey of the bridge, for trying to deprive the government of important artifacts from Navajo National Monument, and even for problems he encountered in recruiting workers for his survey crew. His reports to the GLO failed to mention the Dean's contributions to the establishment of Natural Bridges National Monument or the assistance he gave in supplies and men to the survey of Rainbow Bridge National Monument. As has been shown earlier, this apparent antipathy stretched back at least a year before the two men had even met. Cummings himself was mystified by Douglass's attitude, later writing, "We tried to aid Mr. Douglass in every way possible, telling him of ruins—Inscription House, Kitsil, and Betatakin—which we had previously discovered, and persuaded one of the students, Mr. Neil M. Judd, to stay back with Mr. Douglass' party . . ."[89]

As has been shown, the members of the Utah Archaeological Expedition were perfectly willing to acknowledge their Indian guide, Nasja Begay, as the man responsible for the success of their expedition and the real discoverer of Rainbow Bridge. The times being what they were, however, Douglass and Cummings got all the publicity and were naturally reckoned as the discoverers. That was to change, however, and in a most dramatic fashion.

Around 1920 Mr. Raymond Armsby of Burlingame, California, rode to the bridge as a paying customer of John Wetherill and heard from him the story of the discovery and Nasja Begay's impor-

tant role in it. Mr. Armsby decided that the young Paiute had not received sufficient credit nor publicity for his contribution, so on his own initiative he began to pester the Park Service about erecting a plaque commemorating and explaining Nasja Begay's part in leading the white explorers to the bridge. He even offered to donate the plaque, but this was one of those matters which had to go through the proper bureaucratic channels. Once permission was obtained from the highest level of the Park Service administration, Mr. Armsby commissioned Jo Mora to design the plaque, had it cast in bronze, and shipped it to Flagstaff via the railroad. By this time transportation to the Navajo Mountain area was much advanced from earlier years and so the plaque could be hauled by truck to Ben Wetherill's new trading post on the east side of Navajo Mountain. Getting it the rest of the way was a problem, as the plaque was too large and heavy to carry on a pack mule. John Wetherill solved the problem by designing an old-fashioned travois, essentially a platform between two poles, which could then be pulled behind a horse or mule. The plaque was placed on the platform and then basically dragged about twenty miles by a mule named Phoebe. Mr. Billy Keir was the stone mason who set the plaque in its present location in the national monument. It required a full day to put in place and was secured to the canyon wall by expansion bolts and concrete. It was dedicated on September 2, 1927, at a ceremony attended by sixteen invited guests, including John and Louisa Wetherill and Frank Pinkley, National Parks superintendent of the southwestern monuments.[90] Unfortunately, Nasja Begay could not be in attendance. He and nearly his entire family died in a flu epidemic which swept the Navajo Reservation in 1919. His only surviving child, a son, died in a similar epidemic in 1921.

In the meantime, however, Jim Mike also was to have his partisans. Doulgass continued to tell his version of the story until his death in 1947, but others soon became interested in the case. Clarence Rogers of Blanding, Utah, became acquainted with Jim Mike, who was now living at White Mesa not far to the south, and took up his case. No one in the Utah media seemed particularly interested, but Zeke Scher of the *Denver Post* became involved, and soon the Park Service was persuaded to honor Jim Mike as well. In a 1974 ceremony at the bridge, Secretary of the Interior Rogers C. B. Morton presented Jim, now 101 years old, with a blanket, fifty dollars in back pay, and a citation. A temporary marker was later installed, and on July 4, 1984, a permanent plaque was set up.[91] Sometime after the erection of the temporary monument, someone tore down Nasja Begay's plaque and dumped it into Lake Powell, but it was recovered and subsequently restored to its former location. Hence, today Nasja Begay and Jim Mike, who died at White Mesa, Utah, on October 1, 1977, are together honored at the bridge in the same manner as they rode down the trail, side by side, that fateful August day so many years before.*

Several members of the discovery expedition went on to distinguished and noteworthy careers. William Boone Douglass continued to do survey work and exploration in the Southwest. His name is associated with Bandolier National Monument, Pajarito Park, and the Jemez Mountains, and by 1921 he was appointed U.S. cadastral engineer with headquarters in Santa Fe. He became an important force in the National Parks Association in its attempts to get new national parks and monuments established in the Southwest.[93] In 1925 he retired from the Interior Department and set up a legal practice in Washington, D.C., specializing in patent law. He died on July 7, 1947, at the home of his daughter, Jesse, in Sullivans Island, South Carolina. He was eighty-three.

The year after his discovery of Rainbow Bridge, Byron Cummings traveled to Germany and did postgraduate work in archaeology at the University of Berlin. He returned to the University of Utah in 1911 and continued to do excavations in Tsegi, Navajo Mountain, and the Lukachukai Mountains. In 1915 he was recruited by the University of Arizona to set up their new department of archaeology and to head the Arizona State Museum. In his professional capacity he continued to do extensive research and excavations. He is responsible for the first unearthing of Archaic remains in southern Arizona when, at Double Adobe near Tucson, he found grinding stones

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* The plaque honoring Jim Mike was much smaller than the one honoring Nasja Begay, and so in the 1980s Jerry Jones of the Navajo Generating Station at Page prevailed upon officials of the Salt River Project to donate $6,000 to cast a more appropriate memorial. The new plaque was delivered to the National Park Service but was stored and forgotten until late in 1996, when it was found in a packing crate in the basement of the Glen Canyon visitors' center. In July, 1997, this plaque was mounted next to the Nasja Begay memorial at Rainbow Bridge and dedicated on September 30, 1997. The smaller plaque was removed and given to Jim Mike's descendents.[92]

in a layer below elephant bones.[94] In 1924 at the request of the National Geographic Society he excavated in Mexico at Cuicuilco, uncovering a pyramid which was at that time the oldest monumental structure found in the Americas. He wrote three books, thirty-five articles, and, in 1935, established *Kiva*, the journal of the Arizona Archaeological and Historical Society. He retired from university life in 1938 after having twice (in 1921 and 1927) been named interim president of the University of Arizona. He died in Tucson on May 21, 1954, at the age of ninety-three.

Neil M. Judd followed in the footsteps of his friend and mentor and became a distinguished archaeologist in his own right. From 1919 to 1929 he was curator of American archaeology for the U.S. National Museum, serving as that institution's head curator from 1930 to 1949. He was field director for various archaeological expeditions for the Smithsonian, and from 1921 to 1927 he directed the National Geographic Society's excavations at Chaco Canyon. He was a fellow of the American Association for the Advancement of Science and, in 1939, one of its vice-presidents. He died in Washington, D.C., on December 19, 1976, age eighty-nine.

Stuart M. Young graduated from the University of Utah and worked as a mining engineer in Utah for several years. In 1925 he moved to California and was named manager of a J.C. Penny's store in Los Banos. He continued with the Penny's company until 1939 when he moved to Chowchilla and opened his own department store. He died there in 1972 at the age of eighty-two.

John and Louisa Wetherill continued to operate their trading post at Oljato for one more year, with John still guiding and outfitting scientific expeditions, government parties, and private individuals into the canyons and ruins of the Rainbow Plateau. With the discovery of Rainbow Bridge his notoriety increased and he then got the added business of guiding tourist parties to the bridge. In 1910 word was received that the government intended to build a new school south of Oljato at a place known as Todanestya (Where the Water Runs Like Fingers out of a Hill), so the Wetherills decided to move their business to what they were sure would be a major meeting ground for the local Navajo. John renamed the place Kayenta, and here the Wetherills remained for more than a decade. In 1924 they sold the Kayenta business and purchased a guest ranch on the Arizona-Mexico border, from which they conducted tours into the surrounding country. John died in November, 1944, and Louisa followed him in September, 1945. They are buried in the desert somewhere above Kayenta.[95]

Hoskininni, perhaps the man most responsible for planting and preserving the sacred character of Rainbow Bridge in the collective mind of his people, died on October 30, 1909, a scant two months after Rainbow Bridge was revealed to the white man. While returning to Oljato from Tsegi, Douglass and Wetherill could see the smoke rising from his burning hogan, a Navajo custom marking the passing of one of the last of the great traditional elders.

Was Byron Cummings really the first white man to see Rainbow Bridge? Perhaps because of the miners' debris at the mouth of Aztec Creek and the names written there in charcoal on the canyon wall, the Dean himself had doubts. Accordingly, he consulted the one man who he was sure would know, Cass Hite, then living at his homestead on Ticaboo Creek at the head of Glen Canyon. Why would Hite be the man to ask? Aside from living and exploring in Glen Canyon longer than anyone else, he also ran the post office at Dandy Crossing and had, therefore, talked with just about every prospector who entered and left the canyon. A feature as large and magnificent as Rainbow Bridge would not likely escape his knowing. On being asked about the bridge by Cummings he made the following statement:

> The bridge found near Navajo Mountain is located in about the only spot in the region that I did not explore or prospect. No, I don't think any white man ever saw it until your party did.[96]

Don Beauregard noted only a month after returning to Salt Lake City, "No sign of any previous visit by white men was visible nor probable."[97] This undoubtedly meant no graffiti, campfire circles, or sign of shod horses. The Dean and his people were satisfied, as were most historians for a generation.

In subsequent years three white men stepped forward with claims of prior visitation. One of these was Joe Lee, grandson of John D. Lee, who claims that as a seven-year-old he went with Nasja into the Navajo Mountain country during the winter of 1880–1881.[98] When the snow came the Indians moved their livestock down into the canyon, and Lee states that their main camp was pitched in a great cave next to the natural bridge. The stock was allowed to spread into the tributary canyons and on down to the Colorado, while the main party stayed in Bridge Canyon

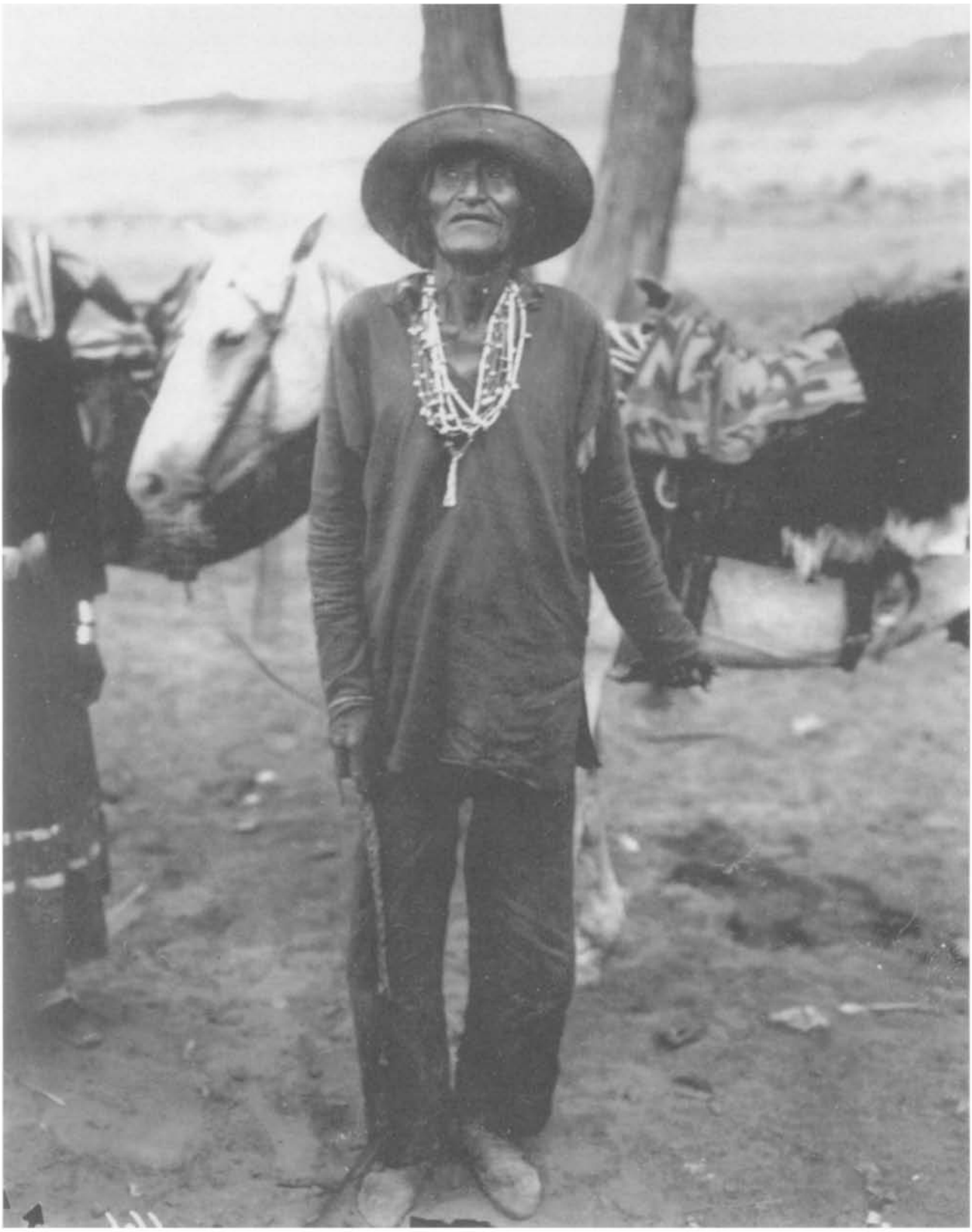


Figure 26: Chief Hoskininni at Oljato, 1909. He was the man most responsible for preserving and fostering the spiritual view of Rainbow Bridge among his people.

all winter. The story seems plausible enough except for some nagging problems. First, all observers writing in the first years after the discovery of the bridge comment on the scarcity of food for their few horses. In addition, Bridge Creek has only one short tributary below the bridge before joining Aztec Creek, and the latter is impassable to cattle and horses only a short distance above the junction. Hence, there were no places for the livestock to "spread." The beach at the mouth of Aztec Creek could have supported a few animals for a short time, but certainly not for an entire winter. Several months in this area would most certainly have meant starvation for the livestock. Second, a family living through the cold, dark months of winter in the great alcove at Echo Camp would have needed a great deal of wood for warmth and cooking, and wood here is in short supply. Also, the ashes from their fires would have remained in the protected alcove for a long time, but such obvious evidence of occupation escaped notice by the discovery party and all subsequent archaeological digs. Finally, a herd of stock could not get into Bridge Creek from Navajo Mountain without a trail. There was no trail in 1909, and both Neil Judd and Malcolm Cummings testify as to the difficulty of leading a single horse into the canyon.

The second claimant to priority was William Franklyn Williams, prospector and miner, who, in a statement given to his sister in 1929, claimed to have been to the bridge twice.[99] The first time was on November 20, 1884, in the company of his father, J. Patterson Williams, and of Chief Hoskininni, who guided them to the bridge. The second visit was on February 15, 1885, when William's brother, Ben, was also along. The statement claims that on both occasions entrance was made into Bridge Creek via Cliff Canyon, which means the Williamses must have crossed over Redbud Pass decades before Bernheimer and Wetherill had dynamited a passage wide enough for pack animals. The statement also claims that on both occasions William observed a number of names carved into the base of the bridge on the freestanding end plus several more names written in charcoal on the canyon walls.

The final claimant was James W. Black, who gave his statement in 1930 reporting visits to the bridge in 1890–1891 and 1894–1895.[100] His route was likewise down Cliff Canyon and over Redbud Pass, and he, like Williams, recalls numerous (about thirty) names cut into the arch and written on the canyon walls. The oldest inscript he remembered was W. E. Mitchell (1861). He also claims to have named Aztec Creek.

Both statements were undoubtedly made sincerely and honestly, but there are numerous instances in them which strain credulity. With respect to Redbud Pass, both men claim to have negotiated it easily on horseback, Williams going so far as to state, "We had absolutely no difficulty getting through there." Bernheimer, at the same place in 1922 states:

> Trail-making down this slit was impossible . . . Wetherill planned and directed the tedious hand-drilling and blasting . . . One of the rock wedges to the left had to be blown up as well as part of another, and the dislodged masses plunged down to fill a deep and wide-gaping hole.[101]

All that effort yielded a passage barely negotiable to the pack animals. When the Richardsons tried to make the passage into a safe and efficient tourist trail a few years later they required $10,000 in dynamite.[102] Today, barely thirty years after commercial horseback parties ceased using the route, the trail is no longer passable to horses and barely so to hikers. That Williams and Black in the late 1800s simply rode through the pass with no difficulty is scarcely believable.

Black claims to have ridden out via the east "trail," pioneered decades later by the Cummings-Douglas Expedition. He states that it was "a real good trail that had been used by the Indians for years and years." The topography of the area is such that the Cummings-Douglass route is the only logical entrance to Bridge Creek from the east. There was no trail there in 1909, and it is impossible to believe that a well-worn trail in that arid country could simply disappear completely in the space of less than twenty years.

Williams claims to have been guided to the bridge by Hoskininni himself, but it is scarcely likely that the spiritual leader of his people would take two white men to a place he would visit himself only to pray. Black claims to have heard of the bridge from Mormons in Bluff who had been told about it by the Utes, but if the bridge were that well-known Wetherill, who traveled frequently to Bluff and had many friends there, would have surely found out about it long before 1907–1908. Black also claims to have discussed the bridge with Cass Hite, who, he says, saw the bridge years before settling in Glen Canyon. Yet, as has been shown, Hite told Cummings that he had never visited the area and knew of no one who had seen Rainbow Bridge prior to 1909.

The inscriptions present a special problem. There were no inscriptions there in 1909 and no trace of any prior to 1909 has ever been found. In addition, the hostility between Douglass and Cummings virtually guarantees that there was no collusion between the leaders to eradicate evidence of previous visitation. In fact, when Stuart M. Young began carving a visitation record in the rocks beneath the bridge to commemorate the discovery, he was severely upbraided by Douglass for vandalism in a future national monument. In any case, Black remembers seeing the Williams's names (or initials) carved in the bridge, but William Franklyn Williams states, "We did not cut our names on the base of the Bridge." Williams remembers seeing James Black's name on the bridge, but Williams was at the bridge years before Black and never claims to have been there afterward.

The foregoing is not meant to imply that either man was lying or that neither man ever visited Rainbow Bridge. It does imply, however, that these statements are insufficient to establish conclusively that any white man was at the bridge prior to Cummings and Douglass. It must be remembered that both Black and Williams gave their statements years after the fact and that time does strange things to memory. In addition, both men were in that country years before any maps were available, and it would certainly be easy to be confused on matters of geography, especially in such wild and lonely country.

Stephen C. Jett postulates two more visitors to the bridge prior to the 1909 discovery expedition—John and Louisa Wetherill. It is Jett's hypothesis that they visited the bridge in 1907 or 1908, guided there by either the Blind Salt Clansman or Nasja Begay.[103] According to Jett, this would explain how Wetherill was able to lead the 1909 expedition so unerringly through the slickrock to Surprise Valley without the benefit of any guide. If true this would mean that the 1909 expedition was simply a masquerade, a put-up job stage-managed by Wetherill to give credit for the discovery to Byron Cummings. Jett has no real evidence for such speculation, and it is difficult to understand why Wetherill would even wish to do such a thing. There would certainly had to have been a conspiracy of silence between John, Louisa, Clyde Colville, and Nasja Begay to have pulled it off, and such conspiracies are notoriously difficult to maintain.

A subsequent researcher, Christopher G. Johnson, adopts Jett's hypothesis and carries it one step further. He concludes that not only was Wetherill at the bridge prior to 1909 but that he eradicated the names and inscriptions carved there by previous visitors.[104] Both Jett and Johnson accept the testimony of Williams and Black at face value, and so the problem of the inscriptions becomes critical. Jett offers no explanation as to what happened to them, but Johnson offers several possible scenarios, concluding that Wetherill was the most likely agent of their obliteration. One thing is certain nearly beyond question—the discovery party of 1909 found no inscriptions, no evidence of previous visitation, and obliterated nothing. The leaders of the expedition were not sufficiently close to hatch a conspiracy of such magnitude, and their subsequent lives reveal a depth of integrity and strength of character which would make such scheming highly unlikely.

Fortunately, the members of the discovery party had the opportunity to directly confront that very accusation. In 1925 the *Los Angeles Examiner* noted stories then circulating about names carved on the bridge and accused the discovery party of erasing them.[105] Neil Judd responded angrily,

> The story is an utter lie. There were no names on Nonnezoshe before August 14, 1909; every name carved since has been removed by John Wetherill in his duty as government custodian of a National Monument.[106]

Wetherill actually admitted to erasing names carved into the rock of the national monument, but only in his official capacity. In a letter to National Parks superintendent Stephen Mather he wrote,

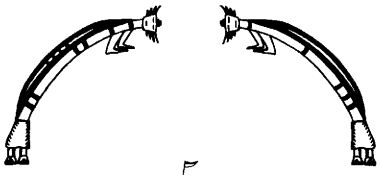
> The names erased were put on the rock by Zane Gray, and David Robinson. I removed them to keep from having to report them. I notified both parties later that I had done so. Gray's name was put on May 13, 1913, and Robinson's in 1916.[107]

The method he used to erase the names, probably using another stone to simply wear the names away, left tell-tale marks which were noted by subsequent visitors and probably led to the supposition that the obliterated names were very old inscriptions.

The scenario that Johnson imagines would have Wetherill riding down to the bridge, noting the dozens of inscriptions, and then, by using tools such as a chisel and hammer (items not normally carried on a horseback trip), removing the names not only from the bridge but also from surrounding rocks and the canyon walls themselves. He must have been very

thorough in his work, leaving not a single inscription anywhere, and he did it in such a way that the results of his effort were forever undetectable. He cleaned up the area, removing all traces of campfires, trails, and even evidence of his own presence, and then rode back out of the canyon, returning the next year with Cummings and Douglass to view an absolutely pristine Rainbow Bridge. The problem with such a scenario is that not only is it extremely unlikely but Johnson offers not one single shred of evidence that any of it actually took place.

So, who should be given credit for the discovery of Rainbow Bridge? In view of the lack of any reliable evidence to the contrary, priority certainly belongs to the Cummings-Douglass Expedition. Even if one accepts the testimonies of Lee, Williams, and Black at face value, their stories did not become known outside their own families for many years after 1909 and were certainly unknown to Wetherill and other members of that expedition. By taking to the trail, Cummings and Douglass, under the leadership of Nasja Begay, ventured into uncharted territory and found an arch whose very existence was mere speculation and rumor. They made known to the outside what has proven to be the world's largest natural bridge, and were responsible as well for its preservation as a national monument. By any measure, then, they discovered Rainbow Bridge, even if it might be shown sometime in the future that they were not the first to see it. The names of Nasja, Cummings, and Douglass will, therefore, be forever associated with the bridge they found and thus serve for us today as examples of courage, character, and love of adventure. All subsequent generations remain in their debt.



5

"Not for Many Eyes to See"

Early-Day Tourism in Rainbow Bridge Country

When Byron Cummings published his article on the natural bridges of southern Utah early in 1910, the whole country was alerted to the discovery of "the largest natural arch yet found."[1] Interviews with members of the discovery expedition appeared in newspapers and magazines from California to Massachusetts, and prints of Stuart M. Young's spectacular photographs were convincing evidence of the beauty and grace embodied in this newest national monument. The adventure inherent in the discovery of Rainbow Bridge excited the interest and imagination of those travelers who yearned for a challenge and had time on their hands, and it became the trip of a lifetime for the hearty souls who journeyed to the Four Corners country to see this natural wonder for themselves.

However, the fact that the bridge was now on the map did not make it any more accessible than it had ever been. There was still no trail that anyone could actually follow on the ground, and the route was precarious for even the most seasoned horseman. For the less experienced, the slickrock domes, steep canyons, and vast, waterless vistas could be dangerous and even deadly. Thus, for the first few decades of the twentieth century, a visit to Rainbow Bridge National Monument necessitated the use of a guide and packer who could supply the adventurer with all the basic necessities and provide a reasonably safe trip into and out of what is even today a very isolated and rugged landscape.

For virtually everyone prior to the mid-1920s that guide and packer was John Wetherill. Not only did he know the way to the bridge, but his trading post at Oljato was ideally situated as a point of embarkation and supply. From his headquarters, John could also take tourists to Keet Seel, Betatakin, and Navajo Mountain as well. The well-publicized discovery of Nonnezoshe gave the Wetherills a good deal of notoriety, and it was not long before tourists began arriving at their door. In fact, the discovery party had barely arrived back at Oljato before Mr. Wetherill returned to the trail, guiding his first travelers to the great arch. According to the visitor register, which John Wetherill established and kept in a coffee can under the east end of the arch, the first party guided in was a couple from New York, Arthur and Helen Townsand, who visited Rainbow Bridge on August 29, 1909.[2] This visit occurred before any publicity about the discovery had even reached nearby communities. It seems probable, therefore, that the Townsands just happened to be traveling in the vicinity of Oljato, heard about the bridge from members of the Utah Archaeological Expedition, and straightaway hired Hosteen John to take them there.

In 1910 Wetherill led three parties to the bridge. The first was in July and consisted of two people from Carson City, Colorado; the other two parties visited in August, the earlier a party of three from Chicago, and the last a party of four from New York. One unusual aspect of these early expeditions concerns the

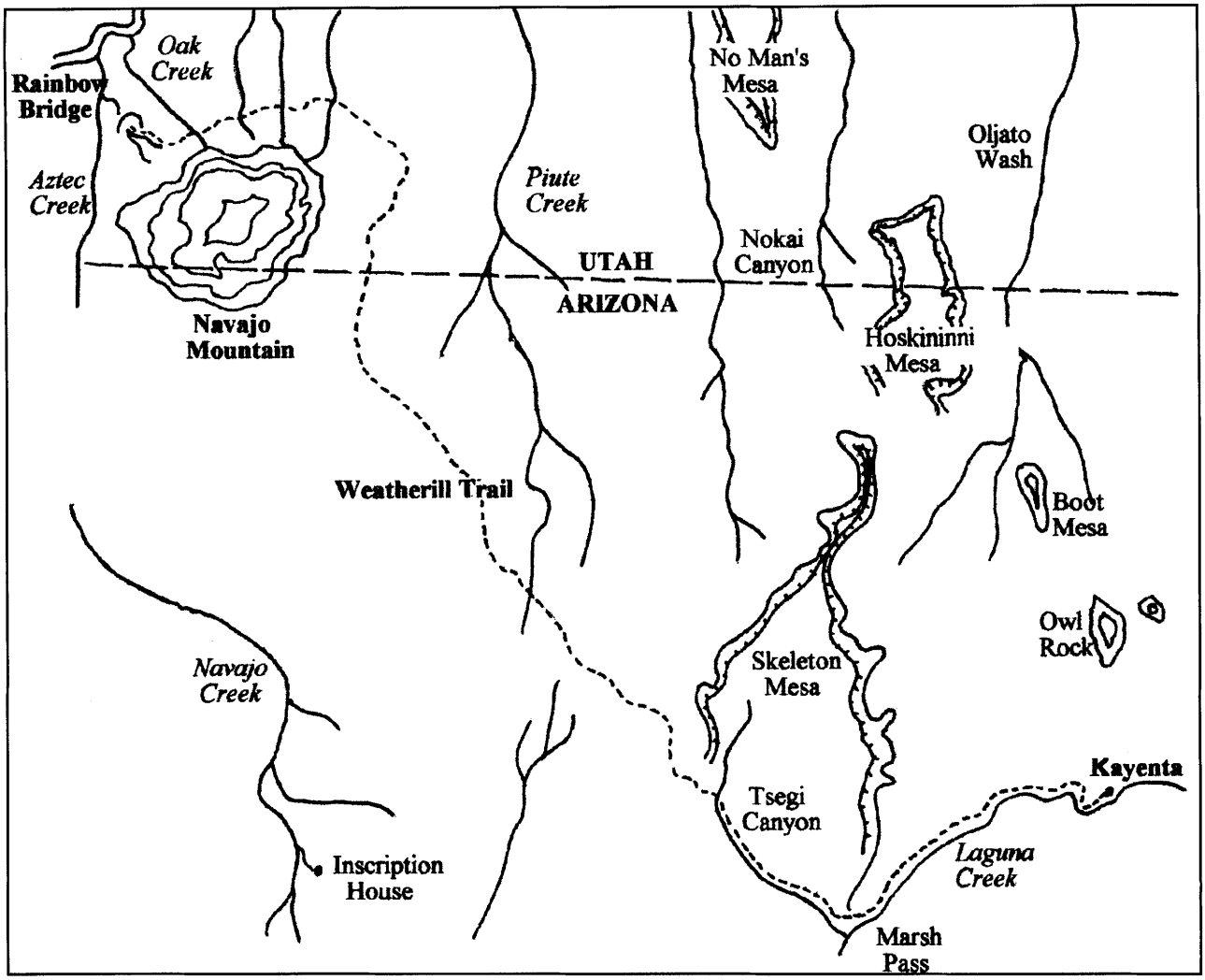


Figure 27. The Wetherill Trail was the route John Wetherill established to take tourists from his new trading post at Kayenta to Rainbow Bridge. Until 1925 it was virtually the only way to get to the bridge.

number of women visiting the bridge. Of the eleven people who Wetherill guided there those first two years, five were female. William B. Doulgass had written in his field diary that due to the difficulty of the journey, no women would likely be interested. He was proved wrong within two weeks of making that notation.

The route Wetherill took from Oljato to the bridge in those early years probably approximated the route taken by the discovery expedition, down Copper Canyon, over Paiute Mesa, and across the Rainbow Plateau via Bald Rock Canyon, Surprise Valley, and Bridge Creek. The topography does not allow for a more direct route, and this was certainly a relatively safe trail with watered campsites and some feed for the horses. There is evidence that Wetherill improved the route somewhat, especially the steep section from Nokai Canyon to the top of Piute Mesa, thereby making it more congenial for his customers and easier on his pack animals. Stan Jones has walked the whole route and reports that the trail can still be followed today, although a large slide near the top of Piute Mesa has badly damaged one short section.[3]

When the Wetherills moved their trading post to Kayenta in 1911 a new route to the bridge became not only possible but preferable. Heading almost due west from his new home, Wetherill could take his customers over Marsh Pass and into Tsegi Canyon. Here there were any number of good springs where the parties could camp while visiting the great ruins

of Keet Seel and Betatakin, now protected within the boundaries of Navajo National Monument. Exiting via Bubbling Springs Canyon, they would then cross the upper end of Piute Canyon and round the east end of Navajo Mountain via the same route followed by Douglass and the government party on their way back from Rainbow Bridge. Wetherill consistently used Surprise Valley along Nasja Creek as the last camp before plunging the final rugged eight miles past Oak Creek and down the east fork of Bridge Canyon. One night was usually spent under the bridge, and the return journey followed the same trail in reverse. It was an incredibly scenic and rewarding trip over a route that presented only a few difficulties and one which could be negotiated by a novice horseman, provided the mount was experienced. By making a few trail improvements and carefully marking his route, Wetherill soon had a relatively safe, reliable trail which could be ridden in about four to five easy days each way. This route was called the Wetherill Trail early on, and some maps give it that designation to this day.

The difficulty of a trip to the bridge was compounded by the problem of even getting to the trailhead at Kayenta. The nearest rail stops were at Flagstaff on the west or Gallup to the east, but even when the traveler had disembarked at one of these relatively remote settlements his problems had only begun. There was little that even approximated a road from either place to or through the Indian country of the Four Corners, and visitors to the region often found themselves confronting dust storms, flash floods, blazing heat, or numbing cold. The journey from Flagstaff to Kayenta via Tuba City could be expected to take five days if conditions were favorable. If they weren't, the journey could end up taking several days more, or might even be impossible. It is little wonder, then, that from 1909 to 1922 Wetherill's register contains fewer than three hundred names, and that includes those few who hiked to the bridge from the Colorado River.

The mass media in those days was but a faint foreshadowing of the saturation levels we know today, but even had there been more opportunities the Wetherills' limited means would have prevented them from having much access to it. Hence, knowledge of Hosteen John's willingness to guide parties to the bridge was spread largely by word of mouth and by published book, magazine, and newspaper accounts written by those who made the trip. Of course, it helped enormously when such reports were written by men whose fame was able to command a national audience. One of the first such accounts was written by western author Zane Grey, who visited Rainbow Bridge on May 13, 1913. Grey was born on January 31, 1872, in Zanesville, Ohio, attended the University of Pennsylvania on a baseball scholarship, and, in 1896, settled down in New York City to practice dentistry. However, he had already been captivated by the craft of writing and gave up his promising professional practice to write novels. The turning point of his new career was a 1907 meeting with one Colonel C. J. "Buffalo" Jones, who let Grey spend some time with him on his ranch hunting and roping mountain lions near the Grand Canyon. The experience transformed Grey's life and career, and he spent the remainder of his days describing the West and his experiences in it.

For his trip to Rainbow Bridge, Grey hired not only John Wetherill but Nasja Begay and an old friend and guide from Flagstaff, Al Doyle. The party set out from Kayenta in early May, traveling the route through Tsegi Canyon and around Navajo Mountain which Wetherill had ridden many times before. For his part, Grey was totally fascinated by all he saw on the journey, and many scenes and characters gleaned from this trip became immortalized in his later novels and essays. The party narrowly averted a disaster when, just as the trail started into Bridge Creek, one of the horses fell and threatened to drag Wetherill and Joe Lee down with it. Only the quick thinking and strength of Lee saved the horse and its precious gear from being lost.

To say that Grey found the bridge enthralling would be a vast understatement. In an essay published in 1922 he wrote,

> This Rainbow Bridge was the one great natural phenomenon, the one grand spectacle which I had ever seen that did not at first give vague disappointment, a confounding of reality, a disenchantment of contrast with what the mind had conceived.
>
> But this thing was glorious. It absolutely silenced me.[4]

Grey was also impressed by the wild and isolated character of the country. He wrote, ". . . after Doyle and I came out we admitted that we would not care to try to return over our back trail. We doubted if we could find the way."[5]

That same summer Wetherill was privileged to guide an even more famous personality to the bridge,

Figure 28: Nasja Begay (?) and Zane Grey at Navajo Mountain, 1913. If authentic, this is the only known photograph of Nasja.

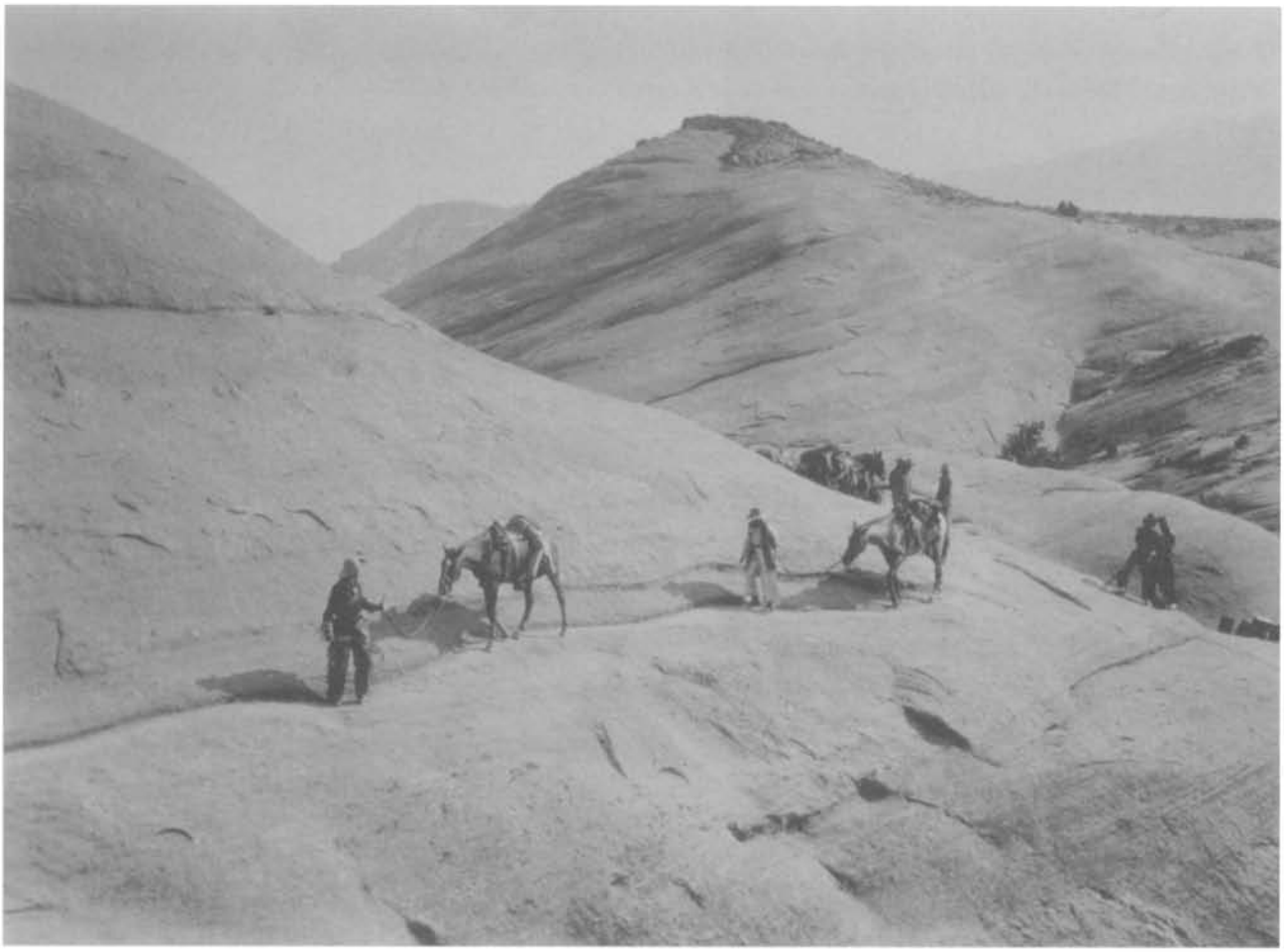


Figure 29: Zane Grey's party descending the slickrock into Bald Rock Canyon. Even for experienced horsemen the trip had moments of tension.

the twenty-sixth president of the United States, Theodore Roosevelt. Having left office in 1909, and following an unsuccessful but spectacular run for the presidency as an independent in 1912, Teddy suddenly found himself at loose ends. He therefore filled his time by traveling, exploring, and writing his memoirs. His expedition to Rainbow Bridge was part of a larger excursion around the Southwest, which included a visit to the Grand Canyon and mountain lion hunting on the North Rim. In late July his party dropped down off Buckskin Mountain, rode east into House Rock Valley, and across the Marble Platform to Lees Ferry. Here they picked up wagons, supplies, and a Navajo guide, and then proceeded south along the Echo Cliffs to Tuba City and east to Kayenta, which they reached on August 9. As all members of the party were experienced horsemen, they traveled fast, and by August 12 they were riding down Bridge Canyon. Wetherill had his guests walk the last mile or so down the creek so that the visitors' first impression would be of the immensity of the span. It was a strategy which apparently worked in Roosevelt's case, for he wrote,

> At last we turned a corner, and the huge arch of the Bridge rose in front of us. It is surely one of the wonders of the world. It is a triumphal arch rather than a bridge, and spans the torrent bed in a majesty never shared by any arch ever reared by the mightiest conquerors among the nations of mankind.[6]

Testimonies such as those given by Zane Grey and Teddy Roosevelt increased the public awareness of the bridge, and by 1922 there were eighty visitors, nearly double the number that had arrived in any

previous year. Almost all these visitors would have traveled via the overland route, and John Wetherill probably guided most of them himself. His connection to the bridge became official when, in 1916, he was appointed the first custodian of Rainbow Bridge National Monument by the superintendent of the newly created National Park Service. He held this position for the next eight years at a salary of one dollar per year.

The automobile as a common mode of transportation was not slow in reaching the Southwest. The first such vehicle to reach the South Rim of the Grand Canyon arrived in 1902, and in 1909 two cars were driven across the Kaibab Plateau to the North Rim.[7] By the end of World War I the "horseless carriage" was everywhere, and routes that had been mere trails or at best wagon tracks were becoming passable to motorized travel. By the early 1920s the route from Flagstaff to Kayenta was at least marginally accessible to the passenger car, making a journey to Rainbow Bridge a bit easier.

In June 1920 a group of four friends from Cleveland set out to make a grand tour, via rail and automobile, of northern Arizona. Arriving at the Petrified Forest on June 24, they proceeded to Grand Canyon, Sunset Crater, and Walnut Canyon before setting out on June 28 for the 160-mile drive to Kayenta. Even in a car it was a two-day trip, so the party was not on the trail to Rainbow Bridge until June 30. The members of the group were probably not experienced horsemen, so Wetherill kept to a leisurely pace. The party arrived at Rainbow Bridge on July 5, clearly worn out and somewhat let down by their experience. W. D. Sayle, one of the participants, wrote,

> Not being particularly impressed with our first view [of the bridge]. . . . Inscribed our names in the Guest Book provided by Mr. Wetherill and kept at the Bridge. Fewer than 150 people have visited the Bridge.[8]

Most of the people Wetherill guided to the bridge were probably little different from the tourists of this or any other age. A few, however, became so enamored of the scenery and so caught up in the mystique of the canyon country that they returned again and again and were to have an impact far beyond their presence as mere visitors. One such man was Charles L. Bernheimer. Born in Ulm, Germany, in 1894, Bernheimer emigrated to the United States in 1881 and began working as an office boy in New York City. By 1907 he had become president of his former employer, Bear Mill Manufacturing Co., and proceeded to amass a fortune in the manufacture of clothing.

Bernheimer became interested in the Four Corners country by reading Herbert Gregory's 1917 work *Geology of the Navajo Country*, and he spent most of his summer vacations exploring the canyonlands and the Rainbow Plateau. He always hired John Wetherill as guide and packer, and together they explored a great deal of new country and made many discoveries of arches, Anasazi ruins, and pictograph panels. Bernheimer visited Rainbow Bridge first on May 23–24, 1920, via the Wetherill Trail and became somehow convinced that a route to the bridge from the west should be possible. In 1921 he was back at Kayenta and hired Wetherill to guide what turned out to be a truly amazing and extraordinarily difficult trip. The party left Kayenta on June 27 and headed west. They visited Betatakin and Inscription House and then followed the mesas and tributary canyons of Navajo Creek to the Colorado River, arriving there on July 2. The party thought they were camped at Crossing of the Fathers, but later found they were several miles too far upstream. They retraced their steps back up Navajo Canyon and camped for a time at the junction of Navajo and Kaibito Creeks. They next rode back up onto the Rainbow Plateau, their goal being, as Bernheimer wrote, to "travel down Ferguson Canyon to its junction with West Canyon [an early name of Forbidding Canyon], to descend the latter until it met the Bridge Canyon, then go up Bridge Canyon to Rainbow Bridge."[9] Bernheimer and Wetherill had clearly studied their geography, and what they planned certainly seemed feasible. However, once in Forbidding Canyon they were quick to discover their error. Bernheimer observed,

> West [Forbidding] Canyon is difficult traveling; one cannot remain long in the canyon bottom because of the shelves of hard limestone. In pouring over these the flood waters had scooped out great pools beneath them which even now were filled with water. The shelves were so high that the animals could not go down them, and even if they had been able to do so we could not have afforded to have our food supply and baggage saturated.[10]

Early one morning John Wetherill volunteered to reconnoiter downstream on foot but returned by early

afternoon to report the impossibility of continuing further.

Bernheimner was not a man to give up easily, however. The following June he, Wetherill, and Earl H. Morris of the American Museum of Natural History were back on the trail and as determined as ever. On June 27 they were camped on Navajo Mountain near the eventual site of Rainbow Lodge, the strategy being to scout a way down by staying high and getting the lay of the land off to the north. The strategy paid off when they spotted a saddle (today's Yabut Pass) leading into Cliff Canyon, and by the diligent use of shovel, pick, and crowbar they made a route to it. The ride from the saddle to the floor of the canyon was steep but otherwise unremarkable, and by June 29 they had made themselves comfortable near a pictograph panel at a spot they aptly named Painted Rock Camp. They quickly confirmed that Cliff Canyon joined Forbidding Canyon, and a little exploration showed that this canyon, even down this far, was up to its old tricks. A short way below their camp the canyon became too narrow for a horse and soon after impassable for a man as well.

The goal of reaching Rainbow Bridge from the west seemed impossible to attain and the party was preparing to pack up when Wetherill noted a cleft in the wall behind their camp which seemed to be headed east. Exploration showed the west end to be steep, sandy, and rocky but otherwise passable. The east end, however, was anything but. The passage near the summit was barely wide enough for a man to squeeze through sideways, never mind a loaded pack animal. The far side was a nearly vertical rock mass containing a hole Bernheimer estimated to be forty feet deep.[11] The party worked for six days, four of them on the east side, chiseling and blasting using TNT, dynamite, and black powder to force a passage through the slot and into Redbud Creek. By a nearly superhuman effort they at last succeeded in making a way sufficient for the pack animals to be led unloaded over the summit. The route was named Redbud Pass "in grateful recognition of a Redbud tree which furnished us with strong and tough crowbars, without which our work would have been greatly retarded."[12] On July 9 the victorious party rode over the pass and on to Rainbow Bridge. Their pack animals and supplies were retrieved three days later, and the party returned to Kayenta via the Wetherill Trail, thereby completing the first circumnavigation of Navajo Mountain.[13] Bernheimer wrote in the visitor register at the bridge,

> By our reaching the Rainbow Arch at 10 a.m. today, we have succeeded to circumnavigate Navajo Mountain with 26 head of stock. My chief thought at this time is that posterity may recognize and appreciate the ability of John Wetherill at finding, constructing the trail through Redbud Pass which after four full days of labor yielded to his genius.[14]

The next year, on May 21, 1923, Wetherill guided a party of four, including the first woman (L. A. Hoover) over the new route to the bridge.

Posterity does indeed recognize Wetherill's role in opening up this western approach to the great arch, but the accomplishment was to prove his undoing as the exclusive guide to Rainbow Bridge. Within three years the old Wetherill Trail was no longer in use and John Wetherill himself out of the business of guiding tourists to the Great Rock-Arch. An era in the history of the bridge was about to close, but a new and brighter one was about to begin.

This new age in Rainbow Bridge tourism was ushered in via the dreams and labors of two brothers, Hubert and S. I. Richardson. Their father, John W. Richardson, was born in Mississippi, but the family later settled in Memphis, Tennessee, and it was at this place that John W. grew up and prospered. Around 1876 he met and married Mary Jane McAdams, and together they produced a family of five sons and two daughters. S.I. (christened Samuel Irby) was born in 1878, Hubert in 1890. Their father ruled his family with an iron fist, and apparently was a man of rigid standards and little affection. His most infuriating propensity was to put his sons to work as soon as they were able and then take all their wages for the support of the family, even though the money was not needed for that purpose. Hence, both S.I. and Hubert left home as soon as they turned eighteen, and both came out to Arizona to work for their maternal uncles.[15]

Their uncle George McAdams was the eldest of eighteen children, older by one year than his sister, Mary Jane. He arrived in the Navajo country in the late 1870s via Flagstaff, where he farmed for a time in an area now known as the Greenlaw Addition just east of town. When the railroad got close in 1882 he cut rail ties for a living, but then moved north and established a small trading post on Rabbit Mesa

a few miles outside Tuba City. Two years later he moved further north and east, establishing a new trading post at Tonalea (Redlake), which stands to this day. When S.I. came out to Arizona in 1896 he clerked eighteen months for his uncle George at Redlake before moving on to other work in Flagstaff and Prescott. However, in 1899 George McAdams and S.I. formed a partnership and bought Wolf Post on the Little Colorado River. S.I. thereby found himself in the trading business, a profession which would keep him occupied for the rest of his life.[16]

George McAdams's youngest brother, Joel Higgins (J. H.) McAdams, had come out to Arizona in 1895 and also got into the trading business. Hence, when Hubert Richardson came out west in 1908 he went to work almost immediately for his uncle at a post called Sunrise Springs and took over that store himself two years later. It was not long before virtually all the Richardson clan was in the trading business, and they grew remarkably adept at it. At one time or another the family owned major trading posts at the Gap, Shonto, Kaibito, Tuba City, Leupp, Cameron, Rainbow Lodge, and Inscription House, plus smaller outposts at other locations as well.[17] In fact, it may be fairly stated that until the 1950s the Richardson family was a major backbone of the trading economy on the Navajo Reservation.

It is not exactly clear how the two brothers, S. I. and Hubert Richardson, got the idea for building a new lodge and trading post on Navajo Mountain. S.I.'s oldest son, Gladwell, says the idea was Hubert's, inspired by a 1923 pack trip from Kaibito around the rugged canyons of the San Juan and Colorado Rivers to Rainbow Bridge.[18] He also writes that the brothers were approached by Navajo Mountain headmen, Hosteen Indischee, Sagnetyazza, and White Hat, to establish a post somewhere in the far northwestern corner of the reservation.[19] The Indians of that area clearly were far from any trading establishment, and figured that a new post in their vicinity would benefit both their people and the white traders. They even had a location to offer: Endische (Willow) Springs on the southwest slope of Navajo Mountain.

What seems most probable is that Hubert's trip to Rainbow Bridge provided inspiration, while the offer by the local Navajos provided opportunity. It is doubtful that trading alone would have persuaded the brothers to build and staff the trading post; in 1923 there were probably not enough Indians living around Navajo Mountain to make such a remote post particularly profitable. They hoped, rather, to cash in on the growing traffic to Rainbow Bridge, and the establishment of a post was a chance to secure the support of the local Navajos for the venture. The western route to the bridge, opened by Wetherill and Bernheimer the previous year, provided a golden opportunity for these ambitious entrepreneurs. After all, it was barely thirteen miles from Willow Springs to the bridge via the new route, while the Wetherill Trail from Kayenta was at least seventy miles. The Richardson plan, if it could be made a reality, would considerably reduce both the time and expense of a trip to the bridge. The key to it all would be the construction of a road from the vicinity of Tonalea to Navajo Mountain. Without it the trading post could not be profitably supplied and the tourists would be unable to reach the trailhead. What was needed was a feasible route, and in that wild and unforgiving country no one seemed sure that such a thing actually existed.

Fortunately, the Richardsons were well-acquainted with a Navajo gentleman, John Daw, who was very familiar with the Navajo Mountain country and was then residing at Redlake. He was ready to suggest a route almost immediately, the path known as the Ute War Trail. In earlier, less peaceful times the route had served for Navajo raids on the southern Utes and then, later on, the Mormon settlements further north. Now it lay unused and nearly forgotten, but Daw had been an army scout at Fort Defiance and offered to lead the Richardsons over the route and assist with road construction.

Permits had to be obtained from both the Indian Agency and the Department of the Interior to establish a trading post and to construct the new road, and here some opposition was experienced. Telegrams and letters were received from California, Washington, D.C., and the Indian country opposing the project, and the Richardsons blamed the Wetherills of Kayenta for fomenting the protests.[20] These objections were all for naught, however, as the appropriate federal agencies were all enthusiastic about the development and employment potential the scheme offered the local Indians.

With permits in hand, all that remained was to start construction. Supplies and equipment were assembled at Cameron, and in the early spring of 1924 the Richardsons set off for Redlake and the beginning of the new road. S.I.'s youngest son, Cecil, and John Daw left first in a stripped-down Dodge car,

Figure 30: John Daw

Figure 31: Building the first automobile road to Navajo Mountain, 1924.

followed by Frank Mahan of Flagstaff and Hopi freighter Walter Lewis driving trucks loaded with supplies.[21] Several Hopi Indians from the nearby village of Moenkopi were hired to do road construction, and it was planned to hire additional help from among the local Navajos as the road progressed north. The idea was to construct a route, rough but passable to motor vehicles, which could be improved later as need and opportunity dictated. Supplies would be trucked in to the workers from Cameron and Tonalea over the new road as construction proceeded.

Daw's route proved to be practical, and construction moved along at a steady pace. Along the easier stretches it was only necessary to grub out the sagebrush; shallow watercourses were bridged by constructing dugways, and, where practical, sandhills were shoveled all the way to bedrock. At one very difficult point a "corduroy road" was constructed by laying pinyon and juniper logs directly on the sandy and pockmarked surface and cemented together with clay. Canyon crossings proved more intractable. When pick-and-shovel techniques proved inadequate, dynamite was used to carve a path down into the canyon and up the other side. Except for the obvious and solvable construction problems the project encountered few difficulties, and within a few weeks they reached the halfway point at Black Wash. Here everything came very close to ending in a bloody disaster.

Except for the Wetherills at Kayenta, this northern and western corner of the Navajo Reservation was unsettled by white men, and a large number of the local populace were determined to keep it that way. The Navajos of the area were quite traditional and ready to wage war not only on the occasional white intruder but on each other as well. The unifying authority of the old chief Hoskininni had been largely moral and spiritual, and at his death the various bands of Indians in the area became even more disconnected from any central tribal authority and even from other neighboring groups.[22] It should not have surprised the Richardsons, therefore, that some Navajos of the Rainbow Plateau country saw the new

Figure 32: S.I. Richardson (seated) and his son, Cecil, during construction of the guest cabins at Rainbow Lodge, 1925.

road not as a benefit but as a threat to their way of life.

The harassment at Black Wash began benignly enough with the tormenting of those Navajos hired to work on the road. When their road crew was chased off by these threats, S.I., Cecil, and John Daw were left to work on their own. They proceeded to blast 150 yards of road out of solid rock, and the hostile Navajos clearly saw that these were determined men. The threats now became more serious; Daw was told to leave his white companions and was promised that all found at the white men's camp would be killed. For several days the small party was continually surrounded by angry Indians, but work on the road continued into the rough canyon country north of Black Wash. One mild skirmish resulted in nothing more than some shoving and a few harmless punches, but the threats were continuing and ominous. Even worse, supplies were running out, and a promised resupply was long overdue.

This seemingly desperate situation was relieved when Hosteen Indischee and several companions from Navajo Mountain rode into the construction camp and confronted the antagonists on their own terms.[23] While certainly not a chief in the tradition of Hoskininni, Indischee could apparently claim a certain amount of suzerainty over the activities in this district, and at his word the war party melted into the trees, never to return. The promised supply convoy arrived from the south the next day, the Navajo work crew was reassembled, and construction swiftly proceeded north out of the canyons and onto the plateau to the very foot of Navajo Mountain itself.

The Richardsons blamed John Wetherill and the Navajos of Kayenta for these troubles, but the accusation seems a bit farfetched. The isolated bands of Indians in the area probably needed little motivation to go after this new white intrusion into their homeland, and the kind of threats made against the lives of the road crew are completely out of character for Hosteen John. As Frank McNitt was later to write,

> . . . there was nothing about John Wetherill that to the observer was heroic and little that was even

Figure 33: Mrs. Hubert (Mabel) Richardson (seated, left), Cecil Richardson, and Irbymae Richardson in camp at Navajo Mountain, 1924. (The man in the center of the photo, a cook, is not identified.)

> colorful. He was an unassuming man of plain habits, plain talk, and plain shameless honesty."[24]

It seems likely, therefore, that the Wetherill family's role in this incident was minimal to nonexistent. Besides, in their twenty-odd years of living on the Navajo Reservation they had seen enough development to know that it could not be stopped simply by sending out a few Indians to rough up a road construction crew.

At Haystack Rock just southwest of Navajo Mountain a new problem arose: the spring selected as the site for the trading post and trailhead could not be located. Looking back it seems odd that the Richardsons would indulge in mile after mile of backbreaking road construction without having the destination clearly in view, but that seems to be precisely what happened. Three days of searching proved fruitless, and the crew was close to abandoning the project altogether, but on the fourth day S.I. encountered Hosteen Indischee's son, Indischee Begay, and Slim Fingers out hunting horses. They led the party up the steep and rugged west slope of Navajo Mountain to a place where several springs bubbled out of the rock.[25] The water had been hard to find because it flowed for only a short distance before being lost again into the ground. Happily, within a week after this discovery the road reached the site of Rainbow Lodge and Trading Post and the trucks were unloaded and sent south for building supplies. The new road from Redlake to Willow Springs was one hundred miles long and cost the Richardsons $50,000. Later improvement eventually shortened the route to about seventy miles, but it remained a long and bumpy drive for decades thereafter.

When the trucks returned, they brought the requisite supplies, three Mexican laborers skilled in building construction, and S.I.'s wife, Susan Annabelle, the first white woman to live at Navajo Mountain. The plan was to first build a large structure to house a dining hall, living quarters, and a trading post; seven guest cabins would be constructed later further up the mountain. The lodge building went up quickly. It was built of native stone with a roof of

Figure 34: Rainbow Lodge, ca. 1940, in its time the most remote tourist resort in the country.

cedar logs covered with a thick layer of packed clay.[26] Considering the location and the scarcity of finishing materials, it was indeed a handsome structure. The nearby springs provided good culinary water, and the overflow ran in a small stream past the lodge, where it watered trees, vines, and flowers. The whole aspect of the place was thereby rendered verdant, comfortable, and marvelously scenic.

Only one obstacle remained to the start-up of the guide buisness from the lodge: construction of a trail which would get the horseback parties to Rainbow Bridge. Gladwell Richardson's account makes it clear that the Richardsons expected to find a serviceable trail leading off Navajo Mountain and over Redbud Pass into Bridge Creek.[27] Apparently, the stories then circulating led them to believe that Bernheimer and Wetherill had spent several months in the summers of both 1921 and 1922 building trail, and when that proved to be totally inaccurate their disappointment must have been bitter. S.I. Richardson and Homer Arhn, who would later serve as the first tourist guide over this new route, were unable even to find the Wetherill route to Yabut Pass, so they, in effect, started from scratch. The first part of the trail went easily enough, with Indian laborers hired to assist with the pick and shovel work necessary around Dome and Horse Canyons. The switchbacks down into Cliff Canyon were provided with turnouts to be used for resting the stock on the way up. It was at Redbud Pass, however, that this frustration was the most acute. Much of the fill that Wetherill and Bernheimer had blasted into the holes on the east side had washed away, leaving the route once again impassable. According to Gladwell Richardson

it took $10,000 worth of dynamite to make the pass wide enough for stock animals. Various government agencies later widened it still more to the point where the present passage is nearly fifty feet lower than it was when traversed by Bernheimer in 1922.[28]

With the completion of the trail it was now possible to begin the tourist business in earnest, but, in point of fact, people had begun coming by the lodge even before the Richardsons were fully ready to accommodate them. The first name in the old visitor register was that of J. D. Walkup, secretary of the Flagstaff Chamber of Commerce, who stayed there on April 25, 1924.[29] The same first page of the register contains the name of John Wetherill of Kayenta, who probably stopped by to wish the Richardsons well in their new venture.

Regularly scheduled horseback trips to the bridge from Rainbow Lodge began in the spring of 1925, and to advertise their new business the Richardsons published a brochure extolling the beauty of the country and detailing the services they were ready to provide. It explained that the trip from Flagstaff to Rainbow Lodge by automobile took a bit over twelve hours, and while extremely rough, was probably as scenic as any drive in the United States. Once at the lodge, travelers would sleep in the small guest cabins, take their meals in the dining room, and prepare for what to most would be the adventure of a lifetime. As the brochure explained,

> The guide will take you to Rainbow Bridge. He will get you there safely and back as well. He will prepare your meals and give you every attention needed. A lady can make the trip with the same ease as a man, and everything has been done that is humanly possible to make the trip one of satisfaction, comfort, and delight.[30]

The horseback trip to the bridge was an overnight excursion, and, true to their word, the Richardsons made every effort to make even this rustic adventure as comfortable as possible. While John Wetherill and his customers slept outdoors on the ground near the bridge itself, the Richardsons made use of a great alcove they named Echo Camp about a half-mile up canyon. Here they erected canvas tents with wooden floors and even provided their guests with beds and clean sheets. A cook shack was erected with all the facilities necessary for the preparation of high-quality meals. One traveler, writing in 1937, described the scene:

> Half a mile from the Bridge a sheltering cliff hangs over a quiet pool of water, quiet but not stagnant as it is fed by springs the year around. The pool is surrounded by rushes and willows, home of hundreds of wrens and mocking birds. A spring, walled with rocks, furnishes water for cooking and drinking. As we ate our evening meal prepared by the guide over a camp fire, plenty of frogs began their "Serenade in the Night," which cheered us to greater feats in devouring steaks and dutch-oven biscuits, peach jam, and cookies. We drank our coffee from pint cups.[31]

Even with quality accommodations, good food, and a guide, the trip to Rainbow Bridge was still a rugged adventure in a very lonely and hostile wilderness, but the sheer inaccessibility of the place seemed only to heighten visitor appreciation of the Great Rock-Arch and its setting. Writing in 1940, Irvin S. Cobb exalted at length on the place it had cost him so much discomfort to reach. He described the bridge itself by saying,

> . . . the crowning achievement of the huge area of uplifting magic in which it lies hidden . . . a perfect symphony in pink sandstone . . . with no vain ornaments to mar the surpassing grace of it, mind you; no superfluous curlicues to distract the fascinated eye from those altogether simple and most truly-scaled lines.[32]

With the distance to the bridge much foreshortened by the new road and trail and with most of the rough edges of the journey removed by the Richardsons' tender care, it is little wonder that visitation to the bridge began to increase substantially. Previous to 1925 the largest number of visitors to the bridge in any single year was 142 during 1923. In 1926 that figure was estimated at over 300.[33] Still, the operation was not showing a profit. Gladwell Richardson reported that every year the lodge filled with guests, but the high cost of bringing in supplies from Flagstaff and Gallup ate up what profit there might have been. The trading post made money, but most of that was paid out to the local Indians for construction and maintenance of the road and trail.[34] The Park Service helped out a bit by contributing $500 per year for upkeep of the trail, but due to the violence of summer thunderstorms and the resultant flash flooding, constant attention was the only way to keep these routes open and even marginally passable.[35]

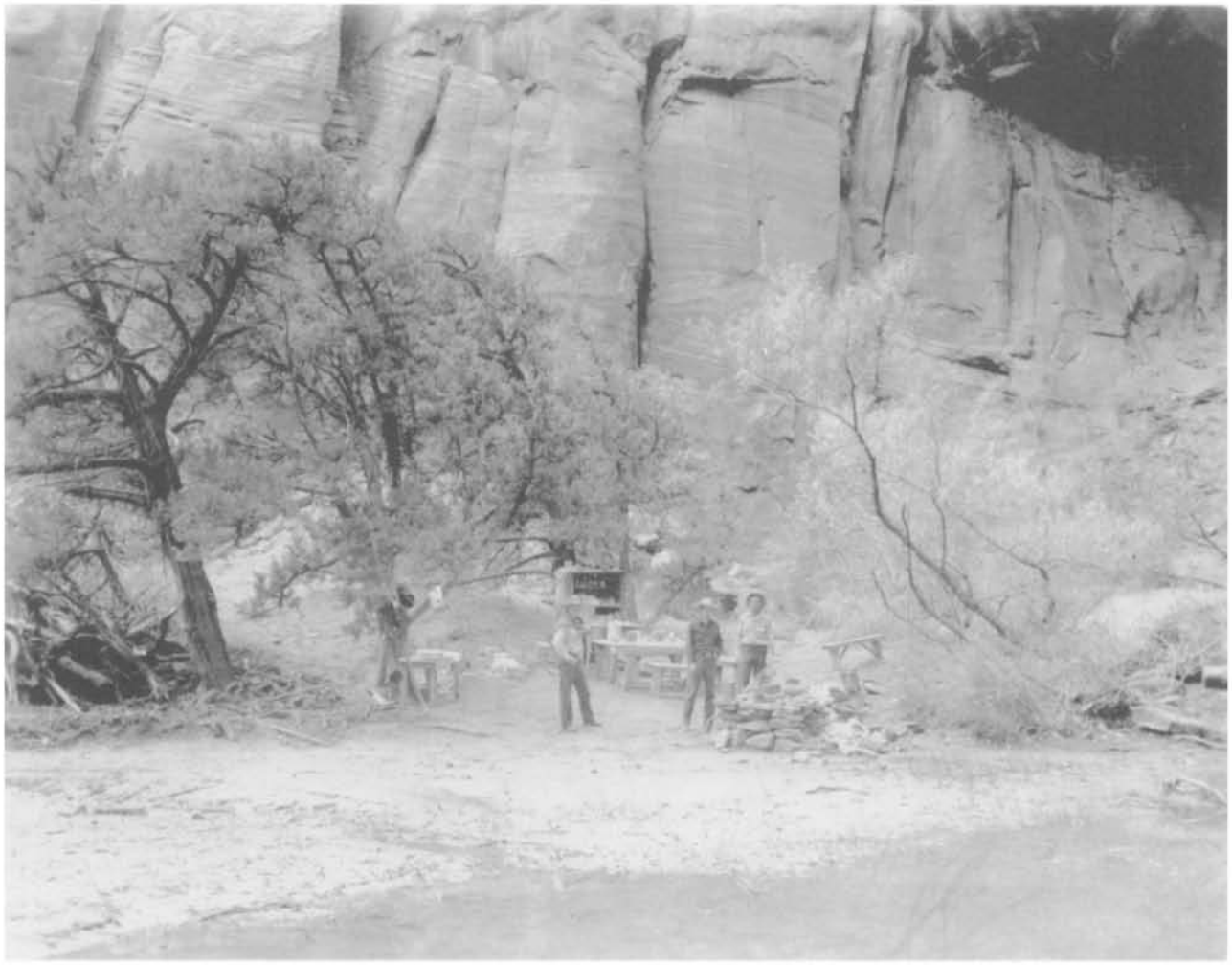


Figure 35: Echo Camp, ca. 1935.

In 1939 Florence Sture, personal secretary to Arizona governor Bob Jones, wrote to the state highway commissioner regarding the route and its importance to the tourist trade in northern Arizona:

> The road from Inscription House to Rainbow Lodge is now in deplorable condition; so bad in fact that it is impassable and those tourists who seek to make the trip to the lodge in order to visit Rainbow Natural Bridge have been forced to turn back because of the condition of the road. It is dangerous to those who attempt to travel over it.[36]

Commissioner Owens forwarded the letter to Coconino County, and George A. Fleming, clerk of the County Board of Supervisors replied, ". . . this is an Indian Reservation road, . . . and we are prohibited by law from spending any moneys whatsoever on any but county roads . . ."[37] In fact, within a decade of its construction by the Richardsons, the road became the joint responsibility of the Bureau of Indian Affairs and the Navajo Tribe, and that is the status it retains to this day.

In late 1926, S. I. and Susie Richardson turned over their share of Rainbow Lodge to Hubert and moved down the road to establish Inscription House Trading Post on Red Mesa. Stanton Borum, a partner and employee of the Richardsons, and at the time manager of the trading post at Cameron, took over management of the lodge and quickly hired Bill and Katherine Wilson to run the day-to-day operations. Bill Wilson was a brother of Mabel Wilson Richardson, Hubert's wife, so, true to the Richardsons' custom, management stayed within the family. Katherine had worked as a librarian in Michigan

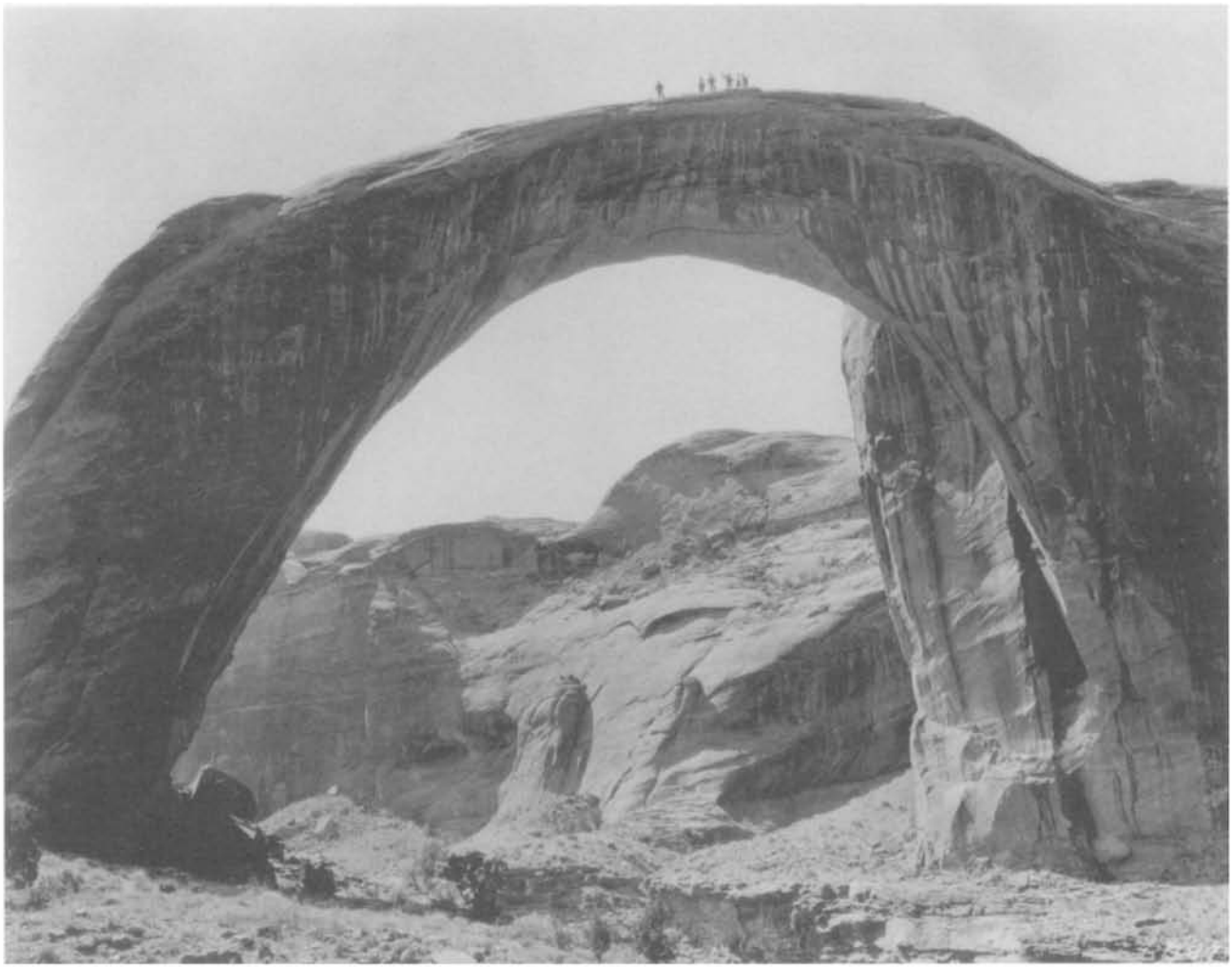


Figure 36: Tourists atop Rainbow Bridge, ca. 1930.

before coming out to Arizona and moving to Navajo Mountain with her husband. The Wilsons were to become near-permanent fixtures at the lodge, remaining there twenty-six years. It cannot have been an easy life for this midwestern couple, but it must have been an agreeable one. Everyone who wrote about them testified as to their warmth and gracious hospitality. For many years, Bill served as chief guide and wrangler, while Katherine cooked for the guests and oversaw the trading post.

At the beginning of the Wilsons' tenure at Rainbow Lodge it cost $20 per person for the overnight trip to the bridge. An additional day at Echo Camp to accommodate a hike down to the Colorado River could be had for $10. By 1938 the overnight trip cost $30 per person, and by the outbreak of World War II it was up to $50. A trip to circumnavigate Navajo Mountain, then a five-day excursion, could be had for $125 per person, and automobile transportation from Flagstaff cost $100 per car for the round trip.[38] While this was a lot of money for the time, it was probably considerably less than what John Wetherill had to charge for the trip from Kayenta and certainly less than what river runners were later to charge for taking guests down the San Juan and Colorado.

During the war, gas rationing and a scarcity of rubber kept most people off the highways and close to home, so, predictably, visitation to Rainbow Bridge virtually disappeared. In fact, the Park Service estimates that only fifteen people visited the bridge in 1943. The Wilsons moved temporarily to Tuzigoot National Monument, in Arizona's Verde Valley, where

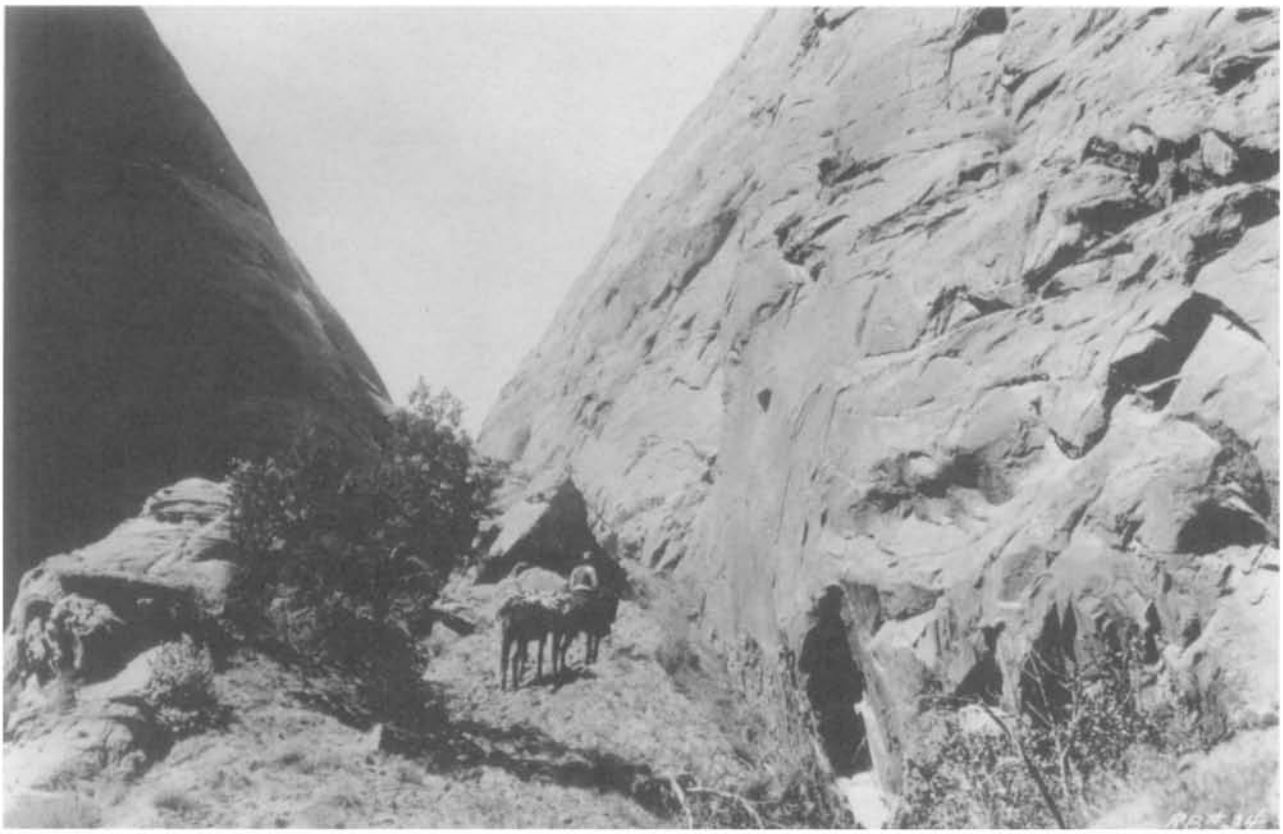


Figure 37. Horseback party ascending Redbud Pass, ca. 1930.

Bill Wilson found employment as a park ranger. Then in 1946 the following announcement appeared in the local Flagstaff newspaper:

> A recent announcement from Phoenix states that Barry Goldwater will be co-partner with Mr. and Mrs. William Wilson in the operation of Rainbow Lodge. Mr. Goldwater left Phoenix last Saturday to go to the lodge to prepare it for the first opening session it has had since 1941. The lodge has seven cottages and a central ranch house and will operate from April 1 to November 1.[39]

This occurred when Barry was barely thirty-five years old and three years before he was first elected to public office as a member of the Phoenix City Council. He had visited Rainbow Bridge in July, 1940 during a river trip with Norman Nevills, had once crashed his airplane into the side of Navajo Mountain, and since the early 1930s had owned a half-interest in the lodge in partnership with Hubert Richardson.[40] In fact, when he started employment with Goldwater's as a clerk, his first supervisor was Sam Wilson, a cousin of Bill Wilson. Aside from these incidental connections, the plain truth is, of course, that Barry Goldwater bought out the Richardsons because he was simply in love with the country and its Indian inhabitants and wanted to keep his hand in the area any way he could. He constructed an airstrip nearby with a two-thousand-foot runway so he could fly up any time he wanted. He and his first wife, Peggy, spent their fifteenth wedding anniversary (September 22, 1949) on the summit of Navajo Mountain and, in Barry's own words, "damn near froze to death."[41] He states, "I was interested in acquiring the Lodge because it had the rights to carry people to the Rainbow Bridge, and that we did."[42]

Following the end of the war and the reopening of Rainbow Lodge, tourism to the great arch rebounded swiftly. In 1948, for example, nearly six hundred people visited the bridge, and by 1955 the numbers went over a thousand. The future for the Goldwater-Wilson operation certainly looked bright,

Figure 38: The work crew and management team at Rainbow Lodge: Bill Wilson, in a conical hat, leans against the retaining wall. Katherine Wilson, in print dress, stands behind him.

but it was not to last. On the evening of August 11, 1951, the beautiful lodge building caught fire and burned to the ground.[43] Barry attributes the fire to a cowboy smoking in the men's room, and he says that the building "really burned fast."[44] A stone structure that had recently been built to serve as a garage was pressed into service as a dining hall so that operation of the guide business could continue, but without the lodge much of the ambience and charm of the place disappeared.

Soon afterward, in May, 1952, Bill and Katherine Wilson finally retired and moved to Clarkdale, Arizona, thereby ending the partnership with Barry which had lasted nearly a decade. Myles Headrick, who had operated the trading post at Rainbow Lodge since Barry bought out the Richardsons, became the new partner. Merritt and Nona Holloway were hired to replaced the Wilsons, and it was announced at the same time that a new lodge building would be constructed and put into service by 1953. For a while it looked as if the old days were being brought back, but it was destined never to happen. As Barry Goldwater succinctly put it, "I was not able to rebuild the lodge because I did not have the money; it would have taken everything I had, and more."[45]

The operation continued to limp along for another dozen years, but in 1965 Barry and Myles dissolved their partnership and the Rainbow Bridge and Hotel Company ceased to be. The rising waters of Lake Powell were making the trip to the bridge a simple three-hour motorboat ride, and there seemed to be little future in the kind of rugged wilderness

adventure that Goldwater's operation was offering. Besides, Goldwater, the Wilsons, and Headrick all learned the same lesson the Richardsons had learned many years before: it was simply too expensive to run a guide business from Navajo Mountain and still turn a profit. As Barry Goldwater later recalled, ". . . the best I did in that enterprise was to lose only four-hundred dollars one year."[46]

Today almost nothing exists to remind the visitor of what once was a hospitable and bustling operation. The local Navajos removed all the roof timbers for fuel, and the tribe later capped Willow Springs and diverted the flow to a tank which stands south and west of the old lodge site. The scene there today is one of utter loneliness and desolation.[47]

During most of the years that the Richardsons and the Goldwaters were operating their lodge and guide service from Willow Springs, there was a smaller but competing operation up the road just over the Utah line. About the time that Rainbow Lodge and the trail over Redbud Pass were being completed and brought into operation, John Wetherill informed the Park Service of his intention to build a camp for tourists on the south slope of Navajo Mountain at a water source known as War God Spring.[48] His son, Ben, actually started work on it, but the idea didn't pan out. However, within a few years Ben Wetherill was operating a new trading post tucked into the side of Navajo Mountain a few miles north and east of Haystack Rock. Hoffman Birney found him, his wife, Merle, and their two young children there in 1928 at the conclusion of his epic 7,250-mile automobile journey around the West.[49] The Navajos called the place Teas-ya-toh (Cottonwood Water), but it was later known simply as Navajo Mountain Trading Post. The focus of Ben's effort was trading, not tourism, but he was more than willing to provide trips to Rainbow Bridge using the old trail from the northeast that his father had pioneered. A nephew of John Wetherill, Ventress C. (Vent) Wade, served as wrangler and guide to Birney's expedition, which ended up taking six days round trip. Incidentally, on the way in they met a party of three tourists plus a Navajo guide from Rainbow Lodge obviously doing the whole circuit around Navajo Mountain.[50]

Ben's venture into trading and tourism at Navajo Mountain actually proved to be moderately successful, and in 1932 he sold the operation to the Dunn family. One of the daughters, Madeline Dunn Cameron, and her husband, Ralph, operated the post for many years until she retired to Oklahoma at the age of seventy-one. The Camerons were still there in 1957 when Ralph Gray of the National Geographic Society arrived for the second leg of a three-part exploration (river, horseback, and air) of the Rainbow Bridge country. Gray and his party took a Dunn-sponsored horseback trip to the bridge, and he became the 10,741st entry in the register still maintained by the Park Service at the base of the bridge.[51]

By the mid-1960s, with the waters of Lake Powell rising gradually up Bridge Creek, the golden age of land-based tourism to Rainbow Bridge was definitely at an end. The last vestige of that time, Navajo Mountain Trading Post, with its store and gas station, closed around 1990. Therefore, as of this writing there are no longer any commercial facilities on the road to Navajo Mountain north of Inscription House and, of course, no one offering regularly scheduled horseback trips to the bridge. It is still possible to arrange a vehicle shuttle and/or transportation to the trailheads through the Navajo Mountain Chapter House, and Ken Sleight of Pack Creek Ranch in Moab or his son, Mark, of St. George, Utah, will still arrange an expedition to the bridge by request. For the most part, however, if you travel the old trails today it will be with a pack on your back and sturdy boots on your feet.

The overland routes to Rainbow Bridge, even with the amenities provided by the guided tours on horseback, led through some of the most wild and rugged country in the lower forty-eight, and the trip could be hot, uncomfortable, and a grueling test of endurance, even for one in decent physical condition. This led some enterprising souls to ask the question, "Why not the river?" After all, it was a short six-mile hike from the Colorado River through a shaded canyon with ample water, and the river through Glen Canyon presented few problems sufficient to challenge even a novice boatman.

There were, however, two difficulties which for many years prevented use of the river as a major tourist route to Rainbow Bridge. First, there was the matter of access. There were really only two points where the river in Glen Canyon could be reached by a vehicle: Hite at the mouth of White Canyon, and Halls Crossing at the mouth of Halls Creek. Neither of these was approached by anything except the most primitive of roads, and so the prospect of hauling boats of sufficient size to carry paying passengers along these rutted desert tracks was enough to discourage

anyone who valued his pickup truck. Actually, the river was easily accessible at two points further upstream. One was at Moab on the Colorado and the other on the Green at Green River, Utah, but between either of these sites and Glen Canyon lay the second obstacle: a frothing maelstrom of rocks, rapids, whirlpools, and boat-trapping eddies known as Cataract Canyon. No one in his right mind would even consider trying to row dudes through what is still one of the most dangerous stretches of white water in the country. Hence, for decades after its discovery, Rainbow Bridge was only infrequently visited from the river.

Probably the first traverse of the Colorado River and its canyons undertaken purely for pleasure and adventure was made by Julius Stone in 1909.[52] Stone, a millionaire industrialist from Columbus, Ohio, had been one of the financial backers of Robert Brewster Stanton and his gold dredge experiment and had floated a short stretch of the river in Glen Canyon with Nathaniel Galloway in 1899. Since then he had toyed with the idea of recreating the entire Powell Expedition, even going so far as to visit the Major in his Washington, D.C., office. Powell gave him absolutely no encouragement, but determined to fulfill his dream, Stone hired Galloway to lead the trip and even brought him to Ohio to construct the boats.[53] On Sunday, September 12, 1909, ten men in four boats set off from Green River, Wyoming. They were on the river for five weeks, arriving at Needles, California, on November 19, 1909. In his book describing the trip, Stone seems to imply that he knew about the newly discovered Rainbow Bridge but had no way of locating it from the river.[54]

Close behind Stone and Galloway were the Kolb brothers, Ellsworth and Emery, who put in at the traditional spot in Wyoming on September 10, 1911, using boats of the Galloway design. These two adventurers had come out west from Pittsburgh in 1902 and set up a photography business on the South Rim of the Grand Canyon. Their motivation for going on the river was the same as Stone's: adventure and photography. They had a rough idea of where the bridge was located and were determined to be the first to hike to it from a river trip. Ellsworth describes their search for the elusive "Bridge Canyon":

> We had directions describing the canyon in which the Bridge was located, our informant surmising that it was thirty miles below the San Juan. We thought it must be less than that, for the river was very direct at this place . . . we began to look for it about twelve miles below camp. But mile after mile went by without any sign of the landmarks . . . Then the river, which had circled the northern side of the peak [Navajo Mountain], turned directly away from it, and we knew that we had missed the bridge. At no point on the trip had we met with a disappointment to equal that . . .[55]

From the Kolbs' description it seems obvious they had been camped on the beach at the mouth of Aztec Creek the night before but had no idea where they were. Then, too, the information on mileage which they had been given was grossly inaccurate; the San Juan joins the Colorado in Glen Canyon at mile 76, while Aztec Creek enters at mile 68.6, a difference of only 7.4 miles. Hence, the Kolb brothers didn't even begin to look for the correct canyon till they were well past it. Of course, these two did eventually get to see the bridge; they traveled to it overland with John Wetherill and then hiked up from the river on several subsequent boat trips.

Part of the problem was that without a map, which didn't exist at that time, the mouth of Aztec Creek was not that easy to locate. Aerial photographs taken before the dam show that the walls at the mouth of Forbidding Canyon were low and uneven on the south side of the Colorado, thereby masking the presence of the side drainage. The little stream itself flowed into the Colorado on the upstream side of a massive bar of sand and gravel and was also easy to miss. Hence, it was probably not until October 15, 1921, when the combined Trimble and Hough survey parties of the U.S.G.S. hiked up Aztec and Bridge Creeks, that Rainbow Bridge was first visited from the river.[56]

The problem of how to get tourists on waterborne trips to the bridge was solved by a man whose name will be forever associated with the Colorado River, Norman Nevills of Mexican Hat, Utah. It was he who first demonstrated that it was both practical and profitable to haul tourists down the San Juan and Colorado Rivers and even through the Grand Canyon itself. The Nevillses came out to Utah in 1921 when William E. (Billy) Nevills got the idea that the San Juan country would be a good place to look for oil. He left his wife, Mae, and his thirteen-year-old son, Norm, in California, sunk what was left of the family fortune into a lot of dry holes, and then, just

for fun, ran the San Juan River in a ten-foot open boat. In the meantime, Norman grew up in California, spent two years at the College of the Pacific in Stockton, and then, in 1927, came out to Mexican Hat to join his folks, who were by then running a lodge and guide service for tourists.[57]

In 1933 he married the love of his life, Doris Drown, whom he met at a dance in Monticello, Utah, and together they planned a honeymoon trip down the San Juan River. Norm built the boat himself from a water trough and an old outhouse, and in March, 1934, the happy couple set sail from Mexican Hat toward Copper Canyon, sixty-seven miles downstream. From that point on, Norman Nevills was hooked on rivers. He experimented with boat designs until he had one that he felt was large enough to carry tourists and gear while at the same time agile enough to take on white water. The canyons of the San Juan were no Glen Canyon—there were rapids, some of them pretty mean, and if he hoped to haul people safely down the river the boats had to be just right.

The design he settled on was a variation on one his father had conceived as a way to get through the massive rapids on the Yukon River in Alaska. They were shaped like old-fashioned flatirons, weighed six hundred pounds each, and were sixteen feet long. Nevills called them "cataract boats," and with them he established a new standard for white water boating on southwestern rivers.[58]

In March of 1936 he was contacted by three professors from Stanford University inquiring about the possibility of a float trip from Mexican Hat to Lees Ferry. The three agreed to provide the food plus transportation back to Mexican Hat for Norm and his boats, and so, that very same month, Norm Nevills escorted his first paying customers down the San Juan and into Glen Canyon. On the sixth day he took his party to fabulous Rainbow Bridge and emerged a few days later at Lees Ferry tired and hungry but elated at the possibilities the expedition had opened up. Later that year, in September, he escorted the Van Eaton party on the same route. These two trips convinced him of the feasibility of turning his passion for the river into a successful commercial venture.[59] For this, however, he needed some publicity plus a good safety record. Both came from what in retrospect seems the most unlikely of sources.

In 1937 a University of Michigan botanist, Elzada Clover, wandered by Mexican Hat asking Norm's advice about collecting cacti, her specialty. Using every bit of charm he could muster, he convinced the somewhat naïve Elzada that a float trip through the Grand Canyon was just what she was looking for. Accordingly, on June 20, 1938, three boats, the *Botany*, the *Mexican Hat*, and the *WEN*, pushed off from Green River, Utah, and headed down-canyon. Elzada had persuaded her lab assistant, Lois Jotter, to come along for female companionship, and these two became the first women to successfully challenge the rapids in Cataract and Grand Canyons. On July 5 the party visited Rainbow Bridge, which Elzada described as "a breathtaking thing."[60]

The journey was not without incident, but on August 1 they emerged onto Lake Mead with barely a scratch amongst them. The trip was awash in publicity, and because of it Norm Nevills was able to demonstrate not only his skill as a boatman but also his capacity for taking paying customers safely on what had heretofore been considered the most dangerous of endeavors. From then on his river business had no trouble attracting customers, and he was able to earn a comfortable living from it. He would normally run several San Juan trips and one Grand Canyon expedition each year, charging his customers fifty dollars per day for the privilege of working their tails off making the trip a success. His reputation for unrivaled skill at negotiating the rapids of Grand Canyon was such that at his death the Park Service considered banning future river trips for lack of a suitable boatman.

The typical Nevills Expedition from Mexican Hat to Lees Ferry was about seven or eight days in length, with Rainbow Bridge reached on the fifth or sixth day. Camp was made on the broad beach at the mouth of Forbidding Canyon, which was usually a comfortable oasis of grass and wildflowers. The six-mile hike to Rainbow Bridge was a welcome change from days of sitting in a boat, and Nevills's passengers were nearly unanimous in their praise of the stone rainbow (plate 8). One wrote in his diary, "Dull would be the soul who could pass by a sight so moving in its majesty."[61] There Nevills's passengers often met horseback and hiking parties who had come via the difficult overland routes from Navajo Mountain, virtually the only place during the entire river excursion where they were likely to meet other non-Indians. These encounters generated even more publicity and acceptance for the method of reaching Rainbow Bridge via the river.

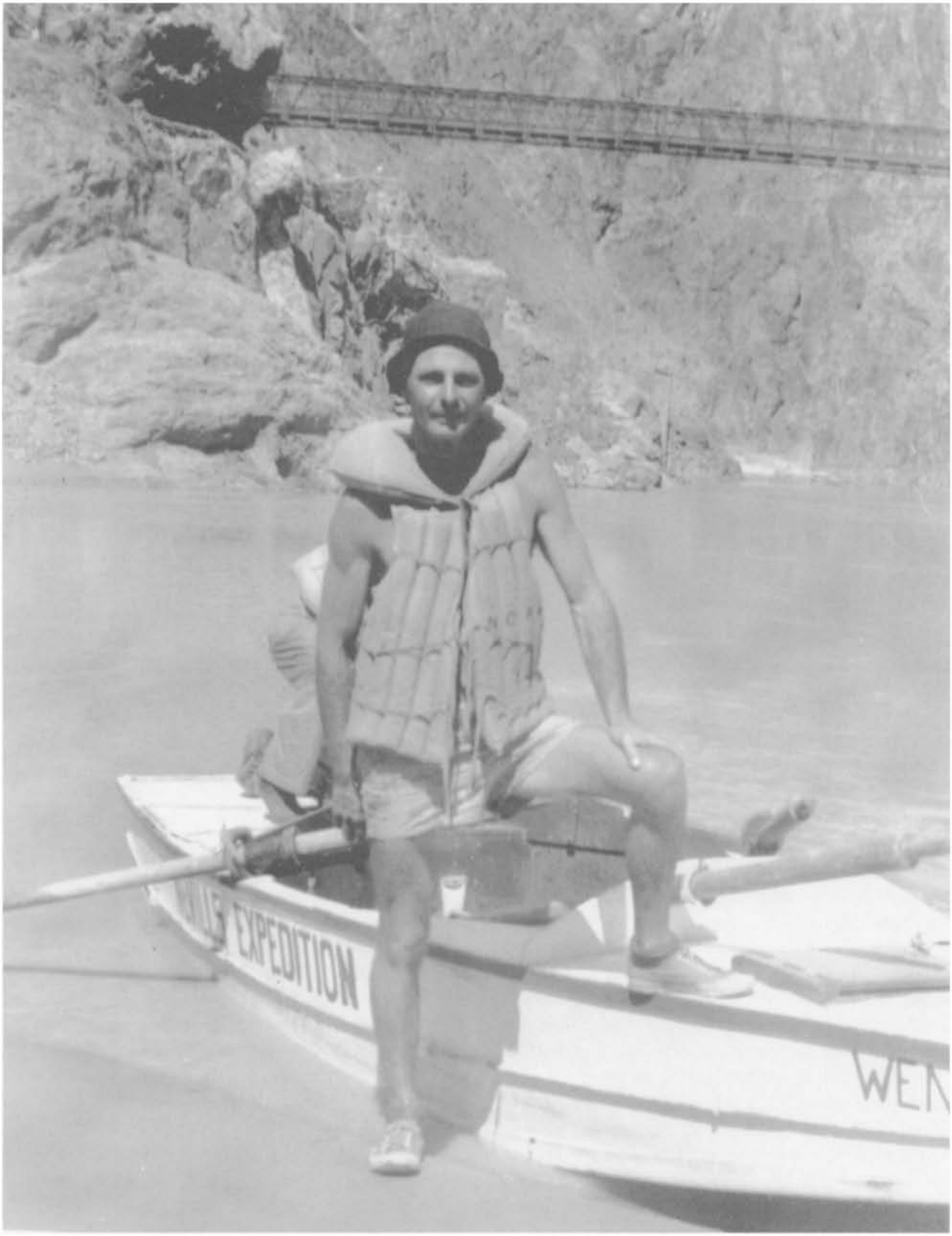


Figure 39: Norm Nevills and his boat, the *WEN*, at Bright Angel Creek, Grand Canyon, 1938.

Sadly, Norm and Doris Nevills were both killed when their small plane, the *Cherry II*, crashed on take-off from Mexican Hat on September 19, 1949. For the river trade, however, their deaths were not an ending but a beginning. The business they founded was taken over by Frank Wright and Jim Riggs, who renamed it Mexican Hat Expeditions and continued plying the San Juan and Glen Canyon for several decades thereafter.[62] Thanks to Norman Nevills, who showed the way, river running as a preferred method of seeing the canyon country was eventually to explode to an extent that even this enthusiastic visionary could not have imagined.

For many years the San Juan was the preferred river gateway into lower Glen Canyon and Rainbow Bridge simply because the road connecting Lees Ferry, the take-out point, and Mexican Hat, the put-in location, was available and decently maintained. It was far from ideal from a tourist standpoint, however, because the river highway down which the boats were forced to travel was filled with rocks, rapids, and mysterious "sand waves." These required skilled boatmen and specially constructed craft to negotiate safely, thereby making for a thrilling but expensive run. Upper Glen Canyon, by contrast, was a placid stream with no rocks or rapids to speak of and which could be done by just about anyone with any kind of boat. The problem was the lack of any suitable road for hauling boats from Lees Ferry back up to some put-in point on the Colorado River below Cataract Canyon. That problem was solved in 1946 when the Utah Highway Department and the counties of Wayne and San Juan finally completed a graded road from Hanksville on the west to Blanding on the east. The Colorado River at Hite was crossed by means of a crude ferry constructed and operated by Arthur L. Chaffin, who had been ranching and farming at Hite since 1932. The road was dedicated by Governor Herbert B. Maw and a slew of county and local dignitaries on September 17, 1946.[63] The new highway eventually passed into the state system as U95, and it remained a dirt track, rough but usually passable, until it was paved about 1965.* With the completion of this road it became practical to launch boats at the head of Glen Canyon and do river trips on the Colorado with ease all the way to Lees Ferry.

One of the first to take commercial advantage of this new opportunity was a young man by the name of Ken Sleight. A native of Paris, Idaho, Ken studied geology at the University of Utah from 1947 to 1951 and then found himself in Korea as a member of the U.S. Army from 1951 to 1953. When the military was through with him, Ken came back to Utah and decided to become a wilderness outfitter.[64] Using rubber rafts left over from the last two wars, he ran Glen Canyon from April through September and did pack trips out of Escalante into the southern Utah desert before and after. He was able to charge a fairly minimal amount per person, so many of his customers were Scout troops eager to exchange the hardship of consuming sandy hot dogs and canned beans for the privilege of dousing each other with buckets of river water a dozen times a day. While his charges were busy cavorting in the river, Ken explored Glen Canyon, one side drainage at a time. Each trip he sough out one section of the canyon in detail, poking into new slits in the sandstone and climbing old cowboy and Indian trails till finally Ken Sleight became an expert on the hidden beauties of Glen Canyon. On every trip Rainbow Bridge was on the itinerary, and he usually included a hike to the bridge's top via the old Wetherill route. He therefore had both a spiritual and economic stake in what happened to Rainbow Bridge, a stake which was to serve conservationists in good stead later on.

From an outfitter's point of view the necessity of hauling boats, equipment, and personnel from the take-out point back upriver to the starting point was a major inconvenience and expense. The roads, though regularly maintained, were dirt, usually rough, and quite likely to wash out during violent summer thunderstorms. Norm Nevills constantly decried the beating his boats and trailers took on the road from Lees Ferry to Mexican Hat, and Ken Sleight was known to break truck axles on the road down North Wash between Hanksville and Hite. This problem could be avoided by simply staying on the river in both directions. This would require motors, of course, because even though the Colorado River in Glen Canyon was a sluggish stream, no man could row against its current all day. There was only one person who ever tried to exploit the commercial possibilities of running tourists up the Colorado to Rainbow Bridge, and that was a Four Corners country native by the name of Art Greene.

Art's family ran sheep in the high desert country around Aztec, New Mexico, at the turn of the

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* The paving of U95 was immortalized by Edward Abbey in chapter 6 of his novel *The Monkey Wrench Gang* (New York: Avon Books, 1975).

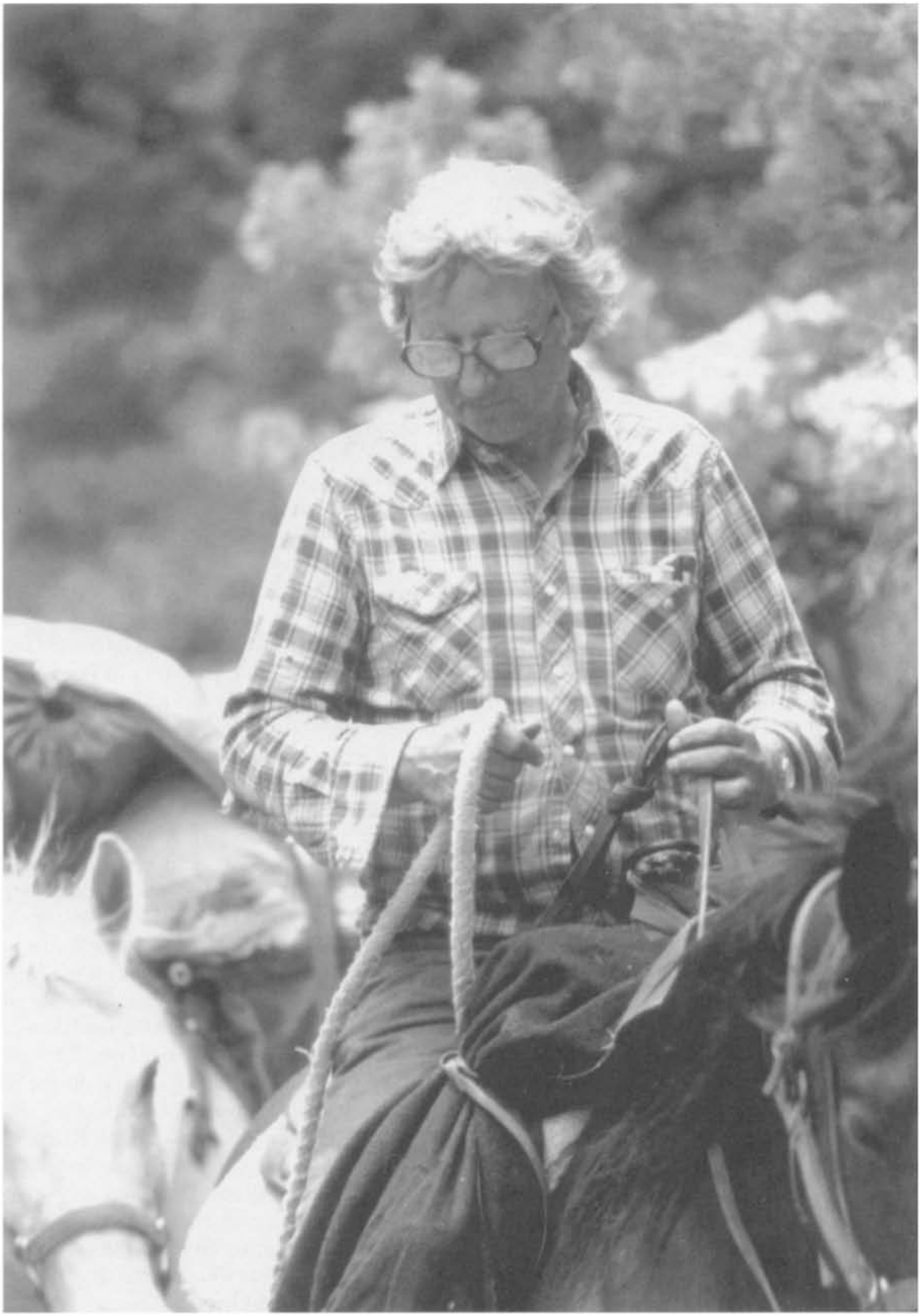


Figure 40: Ken Sleight, one of the premier river runners and tourist guides in Glen Canyon.

Figure 41: Art Greene at Marble Canyon Lodge.

century and used a boat to haul livestock and equipment across the San Juan River. Art was known on occasion to use that boat to take tourists on fishing trips downstream past Farmington and Shiprock for five dollars a ride, and that served as his introduction to the guide business. As a young cowboy, Art had been among the first dozen or so people to see Rainbow Bridge back in 1910,[65] and so when he and his wife, Ethel, found themselves operating a motel, café, and gas station at Marble Canyon in 1943 he got the idea of supplementing their income by taking tourists upriver to the bridge from Lees Ferry, a scant five miles away.

Actually, the idea of getting to the bridge by running the seventy miles upstream did not originate with Art Greene. On October 27, 1921, a party from Los Angeles came upriver to the bridge from Lees Ferry in a stern-wheel powerboat named *Navajo*,

the first (and perhaps the last) time that type of boat was used on the upper Colorado.[66] The boats which floated the 1922 U.S.G.S. survey party led by Arthur R. Davis and E. C. LaRue were actually motored upstream from Lees Ferry to Halls Crossing, where the party finally boarded and began their trip downstream. In 1924 Louis R. Freeman wrote an article detailing an upriver trip to Rainbow Bridge using boats and motors supplied by a Los Angeles electrical company.[67] Greene was perhaps familiar with at least some of these previous attempts at upriver navigation, and so he knew that such trips were certainly possible, and, perhaps, commercially feasible.

The biggest problem with going upriver was the river itself. During high water the current increased to the point that just moving upstream was difficult. During low water the propellers on the boat motors would shear off on submerged rocks or get fouled on sandbars. Then there was always the problem of the huge load of silt carried by the river in all seasons and which seemed to get into every opening, including the moving parts of engines. Art's first trips used a thirteen-foot boat with a standard twenty-two-horsepower outboard motor.[68] If all went well, the round trip, including the hike to the bridge, was three days. If the current were strong or if mechanical problems developed the trip could be somewhat longer.

Early on he began experimenting with airboats, contraptions in which the propeller was actually mounted in the air several feet above the boat itself (plate 9). He got help with design problems from the Coast Guard, Fairchild Aircraft, and Seth Smith of Phoenix, and finally settled on a revolutionary inverted-V design for the hull and powered it with a 450-horsepower Pratt and Whitney engine.[69] The powerful engine and the unique hull design nearly lifted the boat out of the water and made trips possible even when the river was at low flow. However, it made a terrific amount of noise and consumed about five hundred gallons of gas per trip. Hence, every third or forth trip a journey had to be made upriver to cache gasoline. In addition, the airboat required 100-octane fuel, so Art's trips didn't come cheap. A three- or four-day trip cost $250 per person, and in a good year about a hundred people would make the journey.[70]

In 1957 the Bureau of Reclamation began construction of Glen Canyon Dam and cut off all access past the dam site from both upstream and downstream. Art Greene hated the dam, not just because *of what* it threatened to do to his livelihood but what it was certain to do to the Glen Canyon he loved. However, he was nothing if not pragmatic and resourceful. He negotiated a long-term lease with Arizona for 3,840 acres of state land at the canyon's edge upstream from the dam site, built a café, an airstrip, and eight stone cabins, and settled in for the long haul.[71] He bulldozed a twenty-four-mile road from his settlement to the mouth of Kane Creek and continued running his motorized airboat trips upriver until the rising reservoir finally made his beloved Colorado into a lake. His final river trip to Rainbow Bridge took place in the fall of 1962 and included Governors George Dewey Clyde of Utah and Paul Fannin of Arizona as passengers.[72]

With the demise of his airboat business Art Greene did not just dry up and blow away. His little camp on the lakeshore grew into what is today Wahweap Lodge and Marina, which he eventually sold to the Del Webb Corporation for a tidy sum. He then moved on to develop a trailer and vacation home resort called Greenehaven just up the road. He died in Phoenix in 1978.

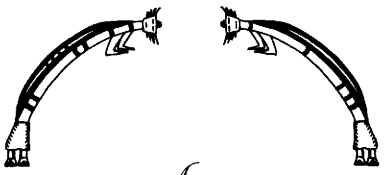
By 1957 nearly twelve hundred people were making the trip to Rainbow Bridge annually, whether overland or by boat, and by the end of 1962 nearly twenty-four thousand[73] people had seen what C. Gregory Crampton calls "the scenic lodestone of the Glen Canyon region."[74] At the conclusion of his 1922 essay on the bridge, Zane Grey had written prophetically,

> It was not for many eyes to see. The tourist, the leisurely traveler, the comfort loving motorist would never behold it. Only by toil, sweat, endurance and pain could any man ever look at Nonnezoshi.[75]

Grey was certainly correct concerning the "toil and sweat" necessary to get to the bridge, but this had not prevented tens of thousands of ordinary people from making the effort to stand at least once beneath the great vaulting semicircle of stone and, as a consequence, gain some measure of inspiration and pleasure from the experience.

However, tourism had scarcely changed Rainbow Bridge at all. Aside from the narrow, rocky trail which now passed under its east abutment and continued on down toward the Colorado River, things here were pretty much as they had always been. The great arch still looked out upon a canyon of incredible beauty in the heart of one of the last great unspoiled and unsettled areas in the country. In wet seasons a small stream would pass under it and happily gurgle

its way down Bridge Canyon toward its junction with Aztec Creek. In winter the bridge would carry an occasional dusting of snow, and in summer the blazing sun would bake it and the surrounding country unmercifully. And then there was always the incessant wind, blasting sand against the bridge and facilitating the continuing act of its creation. Occasionally a man or two would pass by, gaze admiringly up at the stone rainbow, and then go, leaving the majestic solitude and loneliness of the place intact. This is the way it had always been and, as near as anyone could tell, the way it would always be. However, in boardrooms, conference halls, and legislative chambers in places very far away discussions were being held and decisions were being made which would alter the character of this country forever and which would threaten the very existence of Rainbow Bridge itself. The fate of the great arch was to become one with that of the big river, which flowed past only a few miles away.



6

Echo Park and Beyond

The Colorado. As rivers go it isn't large. In fact, in terms of the volume of water carried it doesn't even rank among the top ten of American rivers. For the most part its course lies deep within rugged and nearly inaccessible canyons, so few settlements, and no major cities, grace its banks. Yet circumstances have conspired to make it the most litigated, the most utilized, and the most regulated stream in the world. Today almost none of its flow ever reaches its outlet in the Gulf of California, every drop having long since been diverted to quench the thirsty land around it. The world's first high concrete arch dams were constructed here in an attempt to calm its raging temper, and an entire body of precedent-setting water law has resulted from court and legislative decisions about its ownership and utilization.

The fascinating and unique history of this very special river is the result of several converging factors. For one thing, the Colorado is long and drains a huge area of the American West. From its twin sources high in the Wind River Mountains of Wyoming and the Rocky Mountains of Colorado it flows 1,741 miles across seven states and drains an area of 244,000 square miles in both the United States and Mexico. Its flow is augmented by over fifty tributary streams whose names, such as the San Juan, the Yampa, and the Gila, read like a litany in the history of exploration and settlement of the trans-Mississippi West. Also, through much of this torturous course it crosses land where rainfall is scarce, much of the surrounding country receiving less than ten inches per year.

The topography of this land is as rich and varied as its history, ranging from high mountains with peaks extending well above timberline to cactus-studded and waterless deserts where summer temperatures can reach 120 degrees Fahrenheit. It also happens to be one of the most colorful and scenic regions of the world. Today the Colorado River and its tributaries traverse seven national parks, four national monuments, and four national recreation areas, and countless additional acres of public land along these watercourses have either been set aside as federally protected wilderness or are under consideration for such status. It is also a geologist's paradise. The canyons, mesas, and mountains stand largely naked of vegetation and thereby expose millions of years of depositional history to study and interpretation.

Its precious water irrigates crops in six states and, by means of massive canals, pipelines, and transbasin diversions, is currently fueling the growth and prosperity of such large cities as Denver, Salt Lake City, Phoenix, Las Vegas, San Diego, and Los Angeles. The high dams at Flaming Gorge, Glen Canyon, Curecanti, and Boulder Canyon generate billions of kilowatts and tie into a power grid which electrifies the entire West. With so many conflicting and largely irreconcilable demands being made upon its waters, it is little wonder that the Colorado has been a major source of conflict ever since John Wesley Powell first floated its mysterious canyons in 1869. Today it is said that in Colorado Plateau country you can steal a man's wife, his pickup truck, or his livestock and probably live to tell the tale, but you will not be so fortunate if you mess with his irrigation ditches. It is also said that a thirsty man approaching the river with a bucket is likely to be shot on sight.

Even the name has been problematic. The Pai Indians, who lived on the rims around the Grand Canyon, called it the Pahaweep, which means "Water Down Deep in the Earth." The name Colorado was

Figure 42: The Colorado River at the Loop, Canyonlands National Park

first applied by the Spanish to mark the deep reddish color the river exhibited in pre-dam days, and this name is one of the earliest non-Indian labels in the Southwest to actually endure. However, in Major Powell's day only the lower two-thirds of the river was actually called by that name. The south branch of the waterway from Longs Peak in Colorado to its confluence with the Green was called the Grand River; only the thousand miles from today's Canyonlands National Park to the Gulf of California bore the Spanish name. It took an act of Congress to change that situation. On July 25, 1921, at the behest of a local congressman and without a single objection from the state of Utah, the Grand ceased to be, and the stretch of river from the Rockies to the sea became the Colorado.[1] It is called that to this day in spite of the fact that nearly all hydrologists and geographers agree that the true source of the Colorado lies in Wyoming at the head of the Green River, which carries the largest volume of water into the system.

In this arid country water is life, so from the earliest days of pioneer settlement water was being taken out of the Colorado and its tributaries via small dams, weirs, and ditches to irrigate nearby farms and pastureland. Large-scale diversion of water from the river, however, did not begin until 1901 when Charles Rockwood and George Chaffey cut a diversion channel and sent part of the river north from Mexico to California through the dry channels of the New and Alamo Rivers and into a desiccated and frighteningly hot depression called the Salton Sink (also known informally as the Valley of the Dead).[2] It was not a difficult diversion to accomplish. The river channel was barely above sea level and the sink substantially below it, so once the water was out of its normal course it flowed naturally north and could be put to use watering the deep and rich alluvial soil in what Rockwell renamed the Imperial Valley. In a matter of months two thousand settlers had a hundred thousand acres under cultivation.

The crucial fact which Rockwood and Chaffey either didn't know or deliberately chose to ignore was that the path chosen for their diversion was actually a channel the big river itself was prone to use on

occasion. The Colorado is one of the siltiest rivers in the world, and as the river approached its delta the reduced stream velocity would cause its load of sand to be dumped directly into the channel. As the level of the riverbed rose its pathway would become blocked, and the water would need to find another route to sea level. From time to time this new route poured north directly into the Salton Sink. Eventually this alternative channel would silt up and the river would then happily return to its old ways and flow back into the Gulf of California. The cycle would repeat on a fairly regular basis, and was actually the source of the deep, rich soil the new farmers in the Valley of the Dead were hoping would make them rich.

In early 1904 the Colorado was again ready to make its move. A rare combination of early snowmelt in the high country and heavy rain along the Gila pushed a gigantic flood surge down the river toward the Imperial Valley. The water overpowered the flimsy gates at the head of the diversion, and within a few months the entire flow of the Colorado was rushing headlong into a new lake named the Salton Sea, which now lay shimmering in the desert sun. The helpless settlers watched with amazement as nearly 25 million acre-feet of water tore out railroad tracks, toppled houses, washed away whole villages, and cut great gullies across their fields. It was not until 1907 that the river was forced to reoccupy its old bed and to flow once more south through Mexico, but in the meantime a great lesson had been taught—the Colorado River was not some mild plaything which could be turned on and off like a kitchen faucet. If the water of this great southwestern resource were ever to be put to beneficial use the river would need to be controlled and regulated as no river had been heretofore. However, the structures necessary for such a task were certainly beyond the capacities of any private corporation or amalgam of corporations then in existence. In fact, there seemed to be only one entity capable of such a project, and it was not long, therefore, before expectant southwestern eyes turned toward the federal government in Washington, D.C.

The ink had barely dried on the Powell and Dellenbaugh accounts of the exploration of the Colorado River and the surrounding country before engineers and hydrologists were eyeing the river with possible dam sites and diversions in mind. The lower river from the Gulf of California upstream to the mouth of the Virgin was, in fact, well-known and thoroughly surveyed. It was navigable, and commercial steamboat traffic had been moving up- and downriver for decades even before Major Powell had made his epic voyages. Several sites below the Grand Canyon looked promising for dams, particularly in Black and Boulder Canyons near the small Mormon settlement of Las Vegas. A large dam here would regulate the river's flow, thereby avoiding a repeat of the 1904–1907 Imperial Valley disaster, and it might also be engineered to produce enough hydroelectric power to satisfy the growing demands of cities in southern California. However, one government scientist was certain there was a better way.

His name was E. C. (Eugene Clyde) LaRue, and he was chief hydrologist for the U.S. Geological Survey. It was LaRue's hypothesis that the best spot for the first high dam on the Colorado was not below the Grand Canyon but above it in the vicinity of Lees Ferry, Arizona, near the Utah state line. His thinking was that an earthen dam here could be used to regulate the river, thus allowing development of the lower reaches to proceed in a comprehensive fashion unhindered by the wild fluctuations in stream flow which characterized the Colorado River. In 1916 LaRue proposed a dam at the head of Marble Canyon just below the mouth of the Paria.[3] His proposal envisioned a structure 244 feet high forming a reservoir with 4 million acre-feet of storage capacity backing water 186 miles upstream to the mouth of the Dirty Devil. By 1922, after his trip through Glen Canyon with the Chenoweth survey party, he had moved his dam to a site four miles upriver near Lees Ferry in Glen Canyon, and by now his project had taken on truly mammoth dimensions. This new dam was to be 780 feet high with a storage capacity of 50 million acre-feet and a reservoir 250 miles long.[4] How LaRue arrived at his figures or even selected his sites is still a mystery. At that time the Glen Canyon country was still an unknown quantity—no feasibility surveys had been completed and no decent map of the river even existed. However, LaRue had dedicated his professional career to studying the hydrology of the Colorado, and in spite of the lack of reliable information the accuracy of his figures is a matter of record. From an engineering standpoint LaRue's proposed high dam in Glen Canyon might have been the best idea for controlling the river, but it was doomed from the start by the fact that the utilization of Colorado River water was fast becoming the major political issue in the Southwest.

Figure 43: E.C. LaRue at Diamond Creek, Grand Canyon, 1923

By the 1920s the population of the city of Los Angeles was exploding very nearly out of control and its demand for water seemed insatiable. All local sources had been fully developed, the Owens Valley was drained of every drop, and the city fathers began to cast hungry eyes on the Colorado River. Arizona believed that the big river was its future, and while it was in no position to put the water to immediate use it was also in no mood to sit by and watch California suck the river dry. Faced with such intransigent opposition, California was unwilling to permit the first high dam on the river to be built at Glen Canyon because that would place it wholly within Arizona; in addition, this site was too far away to make practical California's utilization of the power generated. Hence, California's preferred site for a dam remained at a spot in Boulder Canyon straddling Nevada and Arizona. However, it lacked the resources to embark on so massive a project alone. Clearly, federal money would be required, but the support of other states would be needed to get it. Arizona was an implacable foe, and the remaining states in the Colorado River basin were already getting nervous.

This nervousness wasn't helped any by a Supreme Court decision handed down in 1922. In *Wyoming v. Colorado* the court stipulated that, at least for streams flowing between states, the ownership of the water was held by he who first appropriated it, and further that this ownership could not be abrogated by later diversions which might be contemplated further upstream.[5] What this meant for states such as Utah and New Mexico was that if California could somehow get hold of the Colorado River first and utilize the water, these states might well find themselves with no rights to use a river which actually originated in and flowed through their own territory. With the doctrine "first in use, first in right" now a matter of law, it was obvious that California was not going to get the dam or canal it so desperately wanted unless some kind of deal could be worked out for sharing the water between the seven states of the basin.

Most of these states were already members of a loose and informal association called the League of the Southwest, and the subject of the Colorado River was usually on the agenda at their meetings. However, lack of resources, simple inertia, and basic distrust

between the members had kept anything in this direction from being accomplished. The best they could come up with was a statement issued from their April, 1920, meeting, which said, "The League of the Southwest holds as axiomatic that the development of the resources of the Colorado River basin fundamentally underlies all the future progress and prosperity of the Southwest."[6]

This was, apparently, the high-water mark of the members' generosity and good feeling, for by their Denver meeting in August of the same year they were back to their old bickering, distrustful selves. The states on the upper river were justifiably concerned that California, with its surging growth in population and immediate need for water, would establish a de facto hegemony over the river. A. J. McCune, state engineer for Colorado, stated their collective concerns rather bluntly: "Our main fear is that Los Angeles and the people of the Imperial Valley will get the Government committed to a policy that will interfere with our development."[7] It seemed obvious at that point that any further large-scale development along the main stream of the Colorado River would be subject to multiple lawsuits and probably remain tied up in the courts for decades. This, of course, assumed that Congress could even be persuaded to appropriate any money for such development in view of the bitter factionalisms which were dividing the basin states.

Clearly, a way out of this morass would depend upon a combination of dynamic leadership and new ideas, both of which were provided at the Denver meeting by a young lawyer named Delph Carpenter. Attending the league meeting as an aid to Colorado governor Oliver Shoup, Carpenter had served on the defense team in *Wyoming v. Colorado*, and, thus, had seen what court battles over water rights could be like. As a native of Greeley, Colorado, he understood the importance of developing the available water resources as a key to the region's future prosperity, but he realized that without the cooperation of the several states of the basin this development could not and would not occur. His solution was to persuade the seven states of the league to enter into a compact and negotiate among themselves something akin to a treaty dividing up the water of the Colorado River.

The U.S. Constitution expressly forbids states from entering into any such compact *except* by the consent of Congress (Article 1, Section 10, third paragraph).[8] States had used this procedure before but never on such a grand scale as Carpenter envisioned. He considered that the best procedure would be to have the league agree to form such a compact and then petition Congress for the required permission. He persuaded Leslie W. Gillette, state engineer for New Mexico, to shepherd the proposal through the league's resolution committee, and when it reached the floor during the August, 1920, meeting in Denver it passed unanimously. By late spring, 1921, all the legislatures of the league members had approved the idea and so in May the governors of California, Arizona, Nevada, Utah, Colorado, Wyoming, and New Mexico met in Denver and formally petitioned Congress for permission to form a compact.

Congress was not slow to respond. On August 19, 1921, the sixty-seventh Congress passed H.R. 6877 authorizing the states of the league to enter into a compact "not later than January 1, 1923, providing for an equitable division and apportionment among said sates of the water supply of the Colorado River and the streams tributary thereto . . ."[9] Congress provided for a federal representative to the commission and decreed that the agreement to be entered into would take effect upon ratification by the legislatures of all the states involved plus the Congress. The Colorado River Commission was formally in existence.

President Warren G. Harding selected Herbert Hoover, then secretary of commerce, as the federal representative. The other members were W. S. Norviel (Arizona), W. F. McClure (California), Delph Carpenter (Colorado), J. G. Scrugham (Nevada), Stephen B. Davis (New Mexico), R. E. Caldwell (Utah), and Frank C. Emerson (Wyoming).[10] The new commission, with Secretary Hoover as its chairman, held its first meeting on January 26, 1922, in Washington, D.C., and from the start it was obvious that getting the seven states to agree on a plan to divide the waters was not going to be easy. Just because the League of the Southwest had transformed itself into the Colorado River Commission did not mean that the years of distrust which had caused the stalemate would suddenly evaporate. In fact, the talks held in Washington served only to stiffen the resolve of the participants and to harden the divisions between them. On January 30, the Washington meetings were adjourned and the members headed home, ostensibly to hold hearings and consult with their constituents. It also gave Hoover and other federal officials the opportunity to apply a little pressure to individual state delegations and to search for a way out.

In the meantime the federal government was moving forward on still another front. Despite the fact that fifty years had elapsed since the Powell and Stanton Expeditions had floated the Colorado, no accurate map of the river and its canyons had been made. Without such a map it would be impossible to accurately evaluate proposed dam sites and other reclamation structures and thereby plan for the water storage which would certainly be needed once the Colorado River Commission had completed its work.

In 1921 the U.S. Geological Survey set out to remedy the situation. Two survey crews were formed, one to map the Colorado into upper Glen Canyon, and one to map the San Juan and lower Glen Canyon to Lees Ferry. The crew for the upper canyon was headed by William B. Chenoweth and included Ellsworth and Emery Kolb and E. C. LaRue.[11] The San Juan crew was led by Kelly Trimble and included Bert Loper and Elwyn Blake.[12] Trimble's crew left Bluff, Utah, on July 18; Chenoweth's group set out from Green River, Utah, on September 10. The task of both surveys was to get an accurate topographic map of the rivers to the 3,900-foot elevation level so as to evaluate the storage capacities of various potential dam sites in Glen Canyon. On October 5 the two parties joined at the mouth of the San Juan and on October 15 they were camped at the mouth of Aztec Creek. Together with the Hough party of the Coast and Geodetic Survey, also working at the time in Glen Canyon, they hiked to Rainbow Bridge, possibly the first boating party to do so.[13] The next several days were spent extending the topographic survey up Aztec and Bridge Creeks to the desired elevation. This certainly provided the first topographic map of Rainbow Bridge National Monument and the first survey of the area since William Douglass's pioneering work was completed in 1910. On December 15 both parties reached Lees Ferry and the topographic survey of Glen Canyon was finished. Several members of the Trimble and Chenoweth parties went on during subsequent years to survey the upper reaches of the Green River and the Colorado River through Grand Canyon. By October 19, 1923, the map of the entire river system was complete.[14]

Meanwhile, the second session of the Colorado River Conference was set to convene on November 9, 1922, at Bishop's Lodge near Santa Fe, New Mexico. In order to provide some publicity for the commission and to acquaint delegates with the hydroelectric potential of Glen Canyon, several reclamation and power company officials decided to organize a pre-session river trip for interested commission members. In August, 1922 four boats were taken out of storage at Lees Ferry and motored upstream through Glen Canyon to Halls Creek. Here they were joined by a party of ten organized by E. C. LaRue which had departed Salt Lake City on September 3 and which arrived by horseback at Halls Crossing on September 7. Along on the trip were Arthur Powell Davis, Federal Reclamation commissioner, Claude H. Birdseye, chief topographic engineer of the U.S.G.S., Clarence Stetson, secretary of the Colorado River Commission, and John A. Widtsoe, a member of the Council of the Twelve Apostles of the LDS Church and a member of the Utah delegation to the commission.

The party spent nine days floating through Glen Canyon looking over eight possible dam sites and admiring the scenery.[15] On Tuesday, September 12, the party hiked up Aztec and Bridge Creeks to Rainbow Bridge. Dr. Widtsoe describes the journey in stunning terms:

> We walk in red sandstone most of the time. Beautiful pools of colored water are found all along the canyon. The sandstone is tipped up a little to form steps. In one placed a parallel series of steps are formed very regularly with water running down between. Very beautiful. We name it Venus' Stairs.[16]

Concerning Rainbow Bridge itself, Widtsoe wrote, "The Bridge is a marvelous commentary on time. What cannot time do? and What wonders hath God wrought? I spent an hour dreaming in the shadow of the Bridge."[17] John Widtsoe's magnificent journal is one of the earliest surviving testimonies to any man's appreciation of an unspoiled Glen Canyon. Unfortunately, of course, the purpose of his trip was to cement a plan which would result in the destruction and obliteration of almost everything he saw and admired.

When the Colorado River Commission reconvened at their secluded resort in the New Mexico highlands, a solution to the impasse was at hand. Taking up an idea first proposed in January by Arthur Powell Davis, Delph Carpenter suggested simply dividing the Colorado River basin in two and allocating half the river's flow to the states in each division. The amount of water to be allotted to each state could then be worked out later, and perhaps more easily, by negotiations between the states in each sub-basin. The point of division he chose was Lees Ferry at the head

of the Grand Canyon. It was a spot which made great sense both topographically and hydrologically. It was the only point where the river could be easily reached and crossed between Hite, Utah, and Pierce Ferry, Nevada, and it represented a break in the watershed between the tributaries which flowed into the river from Utah and Colorado and those which entered from Arizona. His suggestion resulted in Wyoming, Colorado, Utah, and New Mexico forming the Upper Basin, and California, Nevada, and Arizona forming the Lower Basin. This simple but brilliant stratagem moved the negotiations at Bishop's Lodge off dead center and onto the critical question of how to allocate the water in the river between the two basins.

Part of the problem was that no one really knew, over the long term, how much water actually flowed past Lees Ferry. The closest gauging station on the Colorado was at Yuma, but as no major tributaries entered the river between these two points, it was considered by most engineers to provide a reliable estimate. Another problem was that the Colorado's flow from year to year fluctuated wildly. Between 1899 and 1920 (the only accurate measurements available) the river had peaked at 25.4 million acre-feet in 1909 and dropped to 9,110 acre-feet in 1904.[18] The mean for those twenty-one years was 16.4 million acre-feet, but hydrologist E. C. LaRue, in his 1916 report, indicated a figure of 15 million acre-feet as more reliable.[19] Noting that the 1899–1920 period bracketed a severe drought (1901–1904), the Lower Basin states postulated that a higher figure of 20.5 million acre-feet as a more probably average. The bickering over this figure was critical because, in order to secure an agreement, the Upper Basin states had offered to provide the Lower Basin with a fixed annual flow. They were willing to guarantee only 6.5 million acre-feet, however, a figure California and Arizona were not even willing to consider.

The logjam was broken by a compromise crafted by Hoover and Dr. Widtsoe using LaRue's estimate of the mean annual flow of the river. Under the terms of this agreement the Upper Basin was to provide the Lower Basin with 75 million acre-feet of water through the Colorado River at Lees Ferry, Arizona, during any given ten-year period. This meant, in effect, that the Upper Basin would let precisely 7.5 million acre-feet flow past Lees Ferry in any given year, whether the river was high or low, whether the year was wet or dry. The Lower Basin would have its flow guaranteed—the Upper Basin would have to depend on the weather. This meant that the Upper Basin would be dotted with dams and storage reservoirs as a hedge against the dry years and to provide a steady, reliable flow to the farms and cities that would shortly come to depend on the Colorado and its tributaries.

This agreement also made inevitable the construction of a high dam and storage reservoir somewhere above Lees Ferry but below the confluence of the Colorado with the San Juan, in other words, in Glen Canyon. Only a dam in this location could capture all the runoff from the Upper Basin and at the same time provide the ability to regulate the river's flow as precisely as called for in the agreement. The storage reservoir would need to be large so that constant annual flows past Lees Ferry could be maintained in any long sequence of drought years.

With all the "i's" dotted and the "t's" crossed, the Colorado River Compact was formally signed on Friday, November 24, 1922, and the delegates returned to their individual states to persuade the various legislatures to ratify. The compact was to run into a buzz saw of opposition. California was certain that it had been robbed by the Upper Basin of a significant portion of the water to which it felt entitled; Arizona believed that it had too little information about future water needs to even begin negotiating a pact with California and so refused to consider ratifying. Resistance was also present in the Upper Basin largely because there was serious doubt that there was enough water in the river to meet the terms of the compact.* Utah went so far as to ratify the compact and then rescind its ratification.

For six years the federal government watched this black comedy play itself out and then decided to act on its own. On December 21, 1928, Congress ratified the Colorado River Compact and stated that it would become operative once California and five of the six remaining states concurred.[20] In effect, Arizona was to be hung out to dry—the compact could be ratified and made operational even without its consent. At the same time Congress authorized the

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* In *Cadillac Desert*, page 263, Marc Reisner states that the first hint that the compact might have over-appropriated the river appeared in 1965. A careful reading of the documents available to the Colorado River Commission, however, indicates that as early as 1920 there was solid scientific evidence available that the average flow in the river was closer to 13 million acre-feet than the 15 million the compact actually allocated.

construction of a dam in Boulder Canyon and construction of the All-American Canal to the Imperial Valley but made such authorization contingent on ratification by June 21, 1929.[21] To take care of the problem of Arizona's unwillingness to even begin negotiating a water pact with California, the act set California's share of the river at 4.4 million acre feet annually.[22] In effect, this allocated about 2.8 million acre-feet to Arizona, and as far as Congress was concerned the water issues within the Lower Basin were settled.*

With its dam and canal very nearly a reality, California responded with lightning speed. Within three weeks the legislature unanimously approved the Colorado River Compact and the governor signed the resolution. After much discussion and with extreme reluctance, Utah again ratified the compact on March 6, 1929, thereby providing the six-state margin Congress had demanded. On June 25 President Herbert Hoover pronounced the treaty to be in force, and the Law of the River, as it was soon to be known, became a reality.

As part of the Boulder Canyon Act the Congress authorized the secretary of the interior

> "to make investigation and public reports of the feasibility of projects for irrigation, generation of electric power, and other purposes in the states of Arizona, Nevada, Colorado, New Mexico, Utah and Wyoming for the purpose of making such information available to said states and to Congress and of formulating a comprehensive scheme of control and the improvement and utilization of the water of the Colorado River and its tributaries."[23]

The Interior Department did exactly as it was told. By 1946 they had a report ready for the Congress and the seven basin states identifying 134 potential projects or units of projects.[24] However, the report warned, "There is not enough water available in the Colorado River system for full expansion of existing and authorized projects and for development of all potential projects outlined in the report."[25] It therefore asked the states to work together and prioritize their needs.

One proposal of special note was for a dam in Glen Canyon at LaRue's preferred site four miles upstream from Lees Ferry. The Bureau of Reclamation provided two alternatives for the Glen Canyon project. The first was a dam 401 feet high with a storage capacity of 8.6 million acre-feet. This project would work in tandem with a dam at the mouth of Dark Canyon on the Colorado in Cataract Canyon and a dam on the San Juan at Great Bend. These three dams would together maximize hydroelectric generation capacity from the two rivers. The second alternative was for a single high dam at the Glen Canyon site. This dam would raise the water 605 feet and create a reservoir containing 34 million acre feet.[26] This alternative maximized storage capacity, but its lake would have inundated both the Dark Canyon and Great Bend dam sites and thereby reduced the project's hydroelectric potential. It is worth noting at this point that a dam somewhere in lower Glen Canyon had been part of the picture at least as far back as 1916. The only controversy was its exact location and its size.

By 1950 all remaining water issues were settled and the Department of the Interior and the four states of the Upper Basin had a proposal ready to present to Congress. This plan, called the Colorado River Storage Project (CRSP), was but the first phase of a massive engineering program which would eventually involve a complex series of canals, trans-basin diversions, irrigation works, and hydropower developments. The initial stage called for the construction of ten major dams and attendant storage reservoirs. There was to be one dam on the Yampa (Cross Mountain), three on the Gunnison (Blue Mesa, Whitewater, and Crystal), four on the Green (Echo Park, Flaming Gorge, Gray Canyon, and Whirlpool), one on the San Juan (Navajo), and the granddaddy of them all, Glen Canyon on the Colorado.[27] Two of the dams, Whirlpool and Crystal, were strictly designed for power generation; the others were to be multiple use facilities built for river regulation, water storage, and hydropower.

The structure planned for Glen Canyon was a vastly different dam than either of the alternatives presented in the 1946 document. For one thing it had been moved upstream to a point seventeen miles above Lees Ferry. The bureau had been busy studying the rock at many different sites and had concluded that a location near the mouth of Wahweap Creek presented the fewest difficulties. For another, the proposed dam was lower by twenty-five feet than the high dam envisioned earlier. It was to raise the river 580 feet and have a storage capacity of 26 million acre feet, 24 percent less than that planned eight years

* Arizona did not ratify the compact until 1944.

before. The plain fact is that the bureau's engineers were not sure a higher dam would hold in the porous and fracture-prone Navajo Sandstone. Even so, it would be a massive achievement, pooling behind its graceful concrete span a reservoir holding over half the storage capacity of the entire Colorado River Storage Project and representing almost two years' flow of the whole Colorado River system.

The bureau presented its program to Congress, confident of a friendly reception and swift approval. The senators and representatives of the Upper Basin had wholeheartedly supported appropriations for Boulder Dam and the All-American Canal and felt it was high time they now got their share of federal money and attention. The boys at the bureau were convinced that they were doing God's work by harnessing otherwise useless rivers, thereby bringing water to a thirsty land, and they felt it would be easy to sell at least the major components of the plan to a development-minded Congress and a newly elected Republican administration. They foresaw no problem with the fact that two of their dams were square in the middle of a national monument.

Dinosaur is an odd-shaped preserve straddling the boundary between northeastern Utah and northwestern Colorado.* It was originally proclaimed a national monument by President Woodrow Wilson in 1915 to protect a unique quarry of dinosaur bones and fossils discovered along the Green River by paleontologist Earl Douglas in 1909. The bones actually protruded from the surface in the grey and pinkish shales of the Morrison Formation, and the opportunity to watch scientists dig the huge femurs and vertebrae out of their final resting place attracted a fair number of visitors. These tourist dollars were helping to sustain Vernal, Utah, and other nearby communities, and so by the late 1920s the prospect of increasing the flow of money into area pockets had local people lobbying the National Park Service to increase the size of the monument and extend it into the highly scenic canyons adjacent to the quarry.

The Park Service found the idea interesting and therefore sent Roger Toll, superintendent of Yellowstone National Park, to evaluate the scenic and historical merits of the proposal. His survey resulted in a letter from Harold Ickes, secretary of the interior to President Franklin Roosevelt, in April 1938 recommending an expansion of Dinosaur National Monument to include the canyons of Lodore, Whirlpool, and Split Mountain on the Green to the north and the beautifully sculpted canyon of the Yampa to the east.[28] The proposal was not without controversy, however. In the early 1900s the Federal Power Commission had made several power withdrawals in Lodore and along the Yampa, and the agency was concerned that the monument expansion not affect these withdrawals. Accordingly, language was inserted in the presidential proclamation to the effect that, "This reservation shall not affect the operation of the Federal Water Power Act of June 10, 1920, as amended, and the administration of the Monument shall be subject to the Reclamation Withdrawal of October 17, 1904, for the Browns Park Reservoir Site in connection with the Green River Project."[29]

Thus satisfied, the FPC withdrew its objection, and on July 14, 1938, President Roosevelt issued the proclamation expanding Dinosaur National Monument to 312 square miles in two states. In its wilderness heart, at the confluence of the Green and the Yampa, lay an incredibly beautiful place called Echo Park. Named by Major Powell while he and his party camped along its banks on June 17–21, 1869, it was at this spot that the Bureau of Reclamation proposed to put its dam.

The structure the bureau proposed for this location was a concrete arch dam rising 525 feet above the river and impounding a reservoir with 6.46 million acre-feet of storage capacity.[30] It was designed to work in tandem with a second much smaller dam downstream in Whirlpool Canyon whose sole purpose was to generate electricity. Taken as a single unit, the Echo Park-Whirlpool Canyon project would have been the largest power producer on the Green. Its reservoir was puny, however—barely one-forth the size of that planned for Glen Canyon. The site was actually one of the fourteen potential sites staked out on the river by the U.S.G.S. Green River survey of 1922 led by Ralf R. Woolley, but its selection on the Bureau of Reclamation's final list made it the centerpiece of the entire Green River portion of the CRSP.[31]

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* Much of the material which follows concerning Dinosaur National Monument and the Echo Park controversy is taken in summary form from Mark W. T. Harvey's encyclopedic treatment, *A Symbol of Wilderness: Echo Park and the American Conservation Movement* (Albuquerque, New Mexico: University of New Mexico Press, 1994). Therefore, except at critical junctures, the only sources cited in subsequent pages are those supplying information beyond the scope of Mr. Harvey's work.

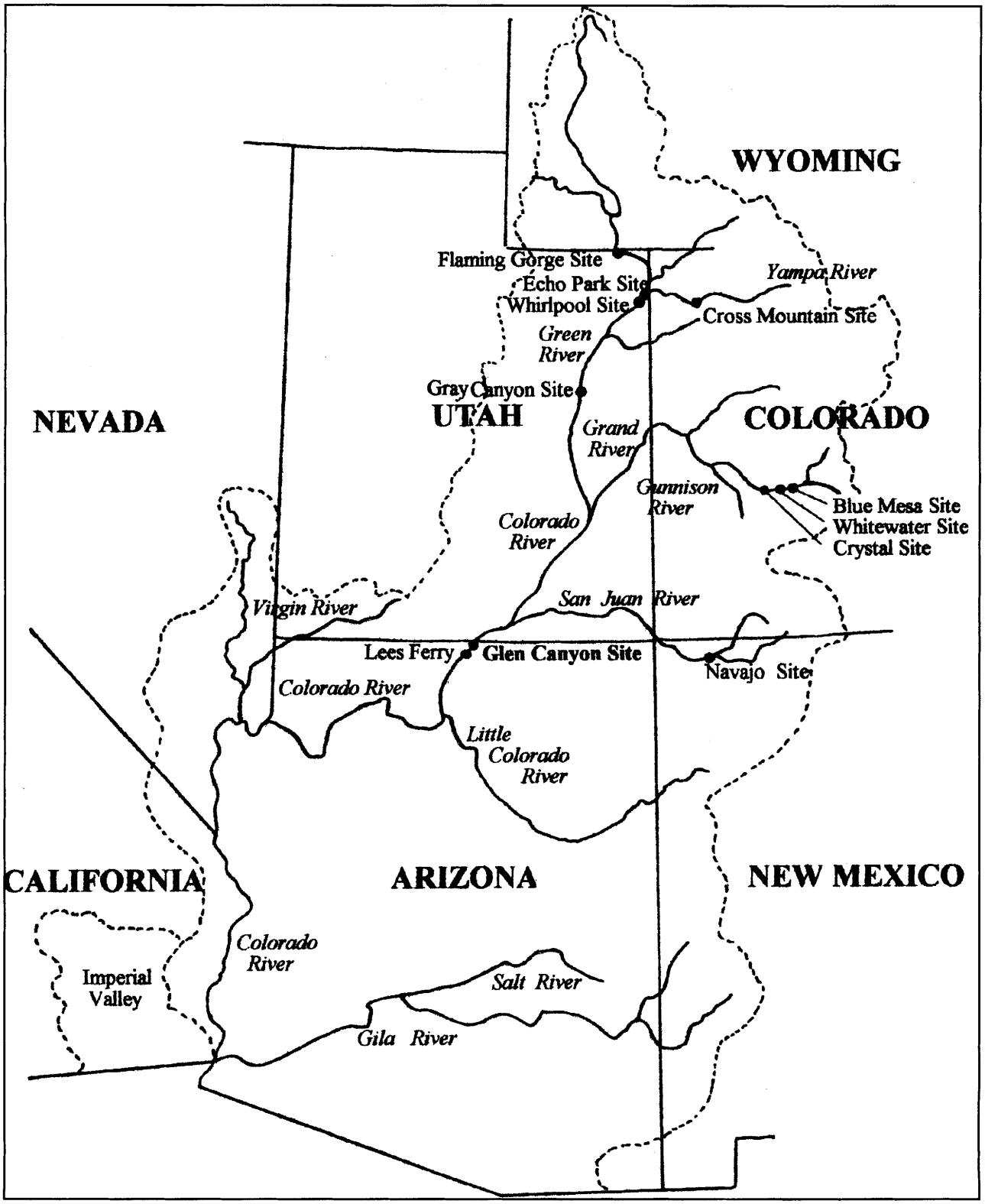


Figure 44: The basin of the Colorado River showing sites proposed by the Bureau of Reclamation as part of the Colorado River Storage Project. Lees Ferry is in the middle of the figure just below the Utah line.

Figure 45: Echo Park, Dinosaur National Monument

The National Park Service was well aware of the area's potential for hydroelectric development at the time Dinosaur National Monument was expanded in 1933, and had even gone so far as to agree that once the dams were in place the status of the monument would be changed to that of a National Recreation Area. By 1950, however, the Park Service was singing a different tune. In a document actually compiled in 1946 the service stated, "The dam would be totally alien to the geology and landscape of the monument. It would be . . . from the viewpoint of monument values, a lamentable intrusion . . . Particularly deplorable effects of the Echo Park Reservoir would occur in the localities of Pat's Hole and Echo Park . . ."[32]

The Park Service and the Bureau of Reclamation were, however, both agencies of the Department of the Interior, and at the time the bureau was by far the more powerful both in terms of influence and appropriations. It was, therefore, a foregone conclusion that once the proposal was before Congress the bureau's voice would be the only one heard.

However, in an effort to appear fair, interior secretary Oscar Chapman held a public hearing on Echo Park on April 3, 1950, in the Interior Building in Washington, D.C. Among the opponents who testified were Bestor Robinson of the Sierra Club, William Voight, Jr. of the Izaak Walton League, Charles Saurs of the Advisory Board on National Parks, Ira Gabrielson of the Wildlife Management Institute, and Newton Drury, director of the National Park Service. By today's standards, it was an impressive gathering, but at the time conservation organizations such as the Sierra Club were mostly small with very localized membership and almost no national voice. Their argument was further weakened by the fact that almost none of the participants at the hearing had even been to Echo Park, much less floated down the rivers which were in dispute. Their case rested rather on the notion of national parks and

monuments as sacred American places which should be inviolate to development, particularly of the type contemplated by the Bureau of Reclamation.

It was a strong theoretical argument but one not likely to win the day. Chapman bided his time and then at the end of June announced his decision in favor of the bureau's proposed dam. Newton Drury was furious. In his annual report to the secretary of the interior he blasted the Bureau of Reclamation for putting the whole National Park System in danger and then resigned as director of the Park Service effective April 1, 1951. In the meantime the *Saturday Evening Post* published a scathing piece by Bernard DeVoto entitled "Shall We Let Them Ruin Our National Parks?" Concerning the proposal for the Echo Park complex, he wrote, "The only reason why anyone would ever go to Dinosaur National Monument is to see what the Bureau of Reclamation proposes to destroy."[33] The piece was accompanied by stunning photographs of Echo Park and Whirlpool Canyon and generated a high level of interest and discussion nationwide. This, coupled with the furor over Drury's very public resignation, put Chapman in a bind. Unwilling to saddle the Democrats with any additional controversy on the eve of a presidential election, he simply refused to submit the Colorado River Storage Project to Congress. The debate would have to await a new administration.

Although not apparent at the time, the delay played right into the hands of the project's opponents. With awareness of the consequences of the bureau's proposals on the increase, the public mood in favor of continued unrestrained development was beginning to shift away from what had heretofore been almost unanimous acquiescence. It would, however, take leadership and considerable skill in organization and public relations to translate this general unease into a movement powerful enough to stop the forward momentum of a plan thirty years in the making.

That leadership was to come, interestingly enough, from the badly fragmented American conservation movement, and the impetus began with a small California-based hiking group few people had ever heard of.

Harold Bradley was a longtime member and officer of the Sierra Club and one of the few who had actually floated the rivers of Dinosaur National Monument. His father had been active in the club since the early days of the century, and Harold had childhood memories of Hetch Hetchy Valley and its destruction by a dam in 1923. He brought to the Echo Park controversy not only firsthand knowledge of the scenic values involved and a commitment to stopping the bureau's plan but also a home movie taken during his river trip. The film began making the rounds of Sierra Club chapters, most of which were located in northern California, and excited considerable interest, so much so that club leadership began planning for a series of trips down the Yampa and Green for the summer of 1953. Nearly two hundred members made the journey, including most of the officers. From that point on the enthusiasm within the club for the battle ahead began to rise exponentially.

The unquestioned leader of the upcoming battle proved to be the club's executive director, David Ross Brower. Born in Berkeley, California, on July 1, 1912, he had attended UC-Berkeley from 1929 to 1931, but dropped out to work as a writer and publications editor. There were two obvious passions in Dave's life—words and mountain climbing—and by working for the Sierra Club he was able to indulge both. He had been a member since 1933, had helped edit the *Sierra Club Bulletin* since 1935, and became the club's first executive director in 1952.[34] Under his leadership the Sierra Club was to be transformed from a small California-based hiking association principally concerned with the Sierra Nevada to a national organization whose name was virtually synonymous with the environmental movement itself. He was a passenger on the 1953 float trip to Dinosaur, and from that point on the battle to defeat the Echo Park power complex became his personal obsession.

Dave Brower realized early on that if the Bureau of Reclamation were to be stopped three elements in the strategy would be absolutely necessary. First, a national campaign would need to be waged, through every media outlet available, to inform the American people about what was at stake in the fight. Not only were scenic values about to be destroyed, but, so the argument went, the entire future of the national park ideal was at risk. Second, a coalition of organizations with national stature would need to be formed. Brower's leadership saw to it that by the time the battle was in full swing seventy-eight organizations had signed on, including such heavy hitters as the Izaak Walton League and the American Federation of Garden Clubs, plus virtually every conservation-minded organization in the country.[35] Third, it

Figure 46: Whirlpool Canyon. The Echo Park-Whirlpool complex was the focus of the first intense environmental battle of the modern era.

was Brower's particular genius in this case to realize that even with the first two elements in place success would hinge on finding some major flaw in the Bureau of Reclamation's justification for the project. Although counseled away from this part of the strategy by such notables as Luna Leopold, formerly chief hydrologist of the U.S.G.S., and Walter Huber, a professional engineer and the club's president, Brower realized that an appeal to scenery and preservation alone would not carry the day. Congressmen normally friendly to development-oriented interests but conservative by nature would need a reason to vote against the project strictly on its lack of merit.

Of course, developing a media campaign and setting up the required coalition take time, and the election of Dwight Eisenhower to the White House in 1952 gave the conservationists the breathing space they needed. Fiscally conservative and basically hostile to the rolling pork-barrel politics of his predecessor, Eisenhower took office and promptly slapped a no-new-starts policy on expensive federal water projects. Therefore, by the time newly appointed secretary of the interior Douglas McKay had sorted things out and had decided to back the bureau's plan for Echo Park, it was December, 1953, and Brower was nearly ready for them.

Editorials and newspaper articles were popping up all over the country, and visitation to the national monument, which had never been very high, started to skyrocket. Brower had two new motion pictures, *Wilderness River Trail* about Dinosaur and *Second Yosemite* about the tragic loss of Hetch Hetchy, making the rounds of Rotary and garden clubs from Massachusetts to California, and on January 4, 1954, just two weeks before the start of congressional hearings on the Colorado River Storage Project, his newly minted and ever-expanding coalition held a press conference in Washington, D.C., denouncing the Echo Park portion of the project. Only the third piece in Brower's grand strategy was missing.

He found the final argument he needed in the congressional testimony of Ralph Tudor, an undersecretary at the Department of the Interior. Tudor patiently explained to the House Interior Committee that Echo Park Dam was necessary because its evaporation rate was lower than any possible alternative, such as New Moab, Gray Canyon, or Dewey. In this he was undoubtedly correct and had he stopped there the bureau's argument might have been convincing. However, Tudor took the fatal next step and proposed a hypothetical. Suppose, he mused, we were to simply add thirty-five feet to the height of the proposed dam in Glen Canyon. This would add 5 million acre-feet to that reservoir's storage capacity, almost the capacity of the Echo Park-Whirlpool Canyon complex. However, the reservoir behind the high Glen Canyon alternative would have a surface area of 186,000 acres and would evaporate 691,000 acre-feet annually. The bureau's preferred low Glen Canyon-Echo Park combination would evaporate 621,000 acre-feet annually. The difference was only 70,000 acre-feet, but Tudor triumphantly announced the difference to be 165,000 acre-feet. Some functionary at the Department of the Interior had forgotten to subtract Echo Park's projected evaporation from the non-Echo Park alternative and had given Tudor unreliable information.

Brower seized on the error like a lion with a mouse in its paw—at least it was a start. He still had 70,000 acre-feet to account for, but he figured where there was one mistake a second might be lurking. Evaporation was critical to the bureau's argument because the bureau said it was and because every acre-foot evaporated in the Upper Basin would need to be made up in storage somewhere else. Brower began to look hard at the bureau's figures for Glen Canyon: the low Glen Canyon reservoir would have a surface area of 153,000 acres and would evaporate 526,000 acre-feet annually, while, according to the bureau, the high Glen Canyon alternative would have a surface area of 186,000 acres and would evaporate 691,000 acre-feet annually. He assumed that surface area and evaporation would be in direct proportion, i.e. doubling the surface area would double the evaporation, etc., but the bureau's estimates did not conform to this model. Doing his own calculations Brower figured that the high Glen Canyon alternative should only evaporate 640,000 acre-feet annually, making this alternative very close to a substitute for the Echo Park complex. He was sure that the opening he sought had at last been found and it lay in the bureau's own arguments.

When Brower laid out his findings before the House, the Interior Committee was stunned. How is it that this college dropout could out-calculate the best engineers and hydrologists in the country? The very next day the bureau had Cecil Jacobsen fly out from the Salt Lake City regional office to counter the argument. What he did basically was give the House committee a snow job by using calculus and

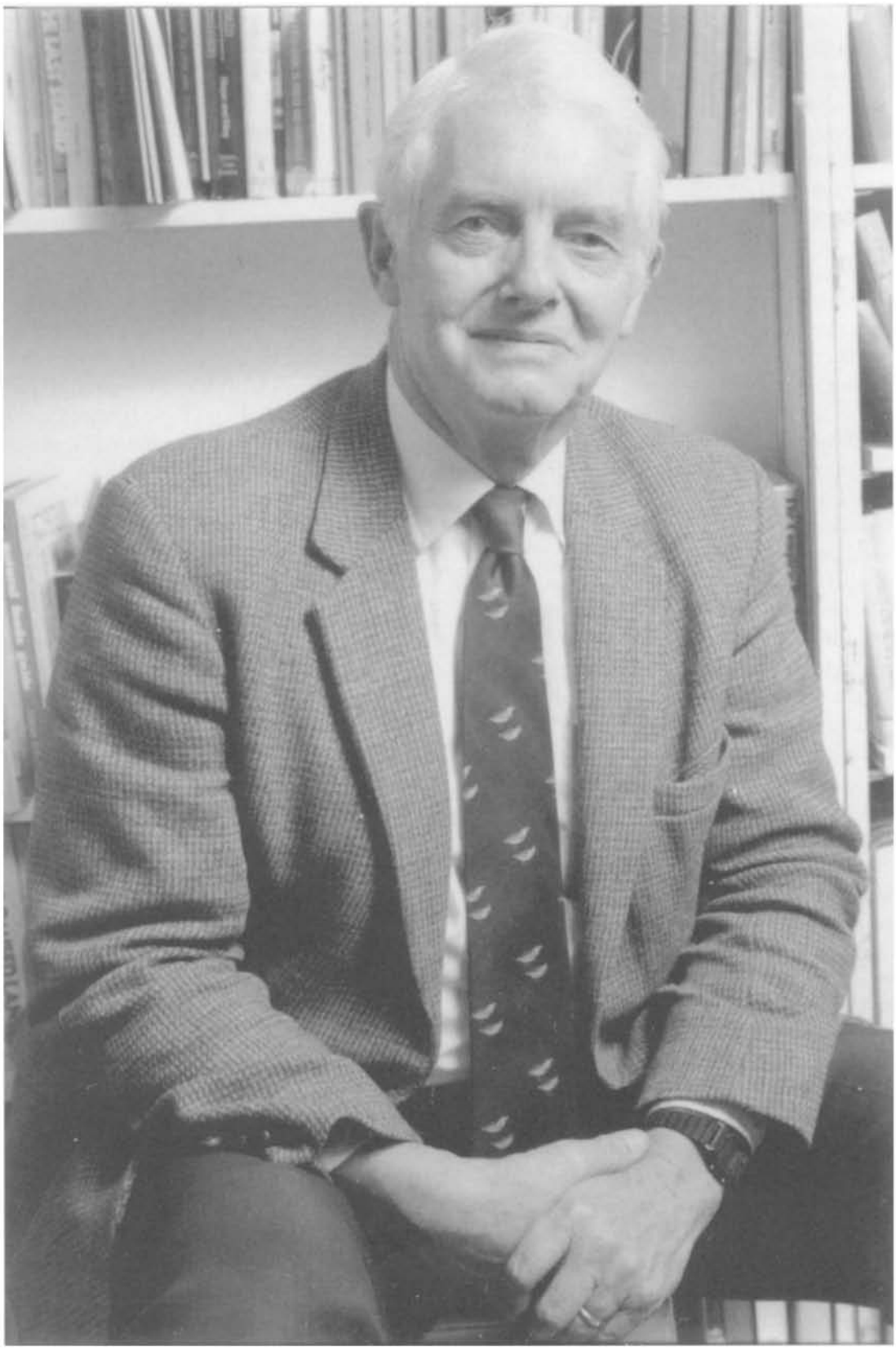


Figure 47: David R. Brower

higher-order physics to demonstrate that Brower's linear model was a vast oversimplification. Probably no member of the committee had the foggiest notion of what Jacobsen was talking about, but they were sure that the upstart Brower had been put in his place. The Utah delegation in particular was sure it would never have to hear any more about this evaporation nonsense.

Brower understood no more about Jacobsen's argument than did any member of the House, but he had friends who might. He called Richard Bradley, professor of physics at Cornell University and son of Harold Bradley. Richard had floated Dinosaur with the Sierra Club in 1953, was a committed environmentalist, and he told Dave that he would see what he could do. What he found was that evaporation was a very inexact science with little published research and almost no reliable data. He confessed to not understanding Cecil Jacobsen's mathematical reasoning either but opined that the bureau's estimates were probably as good as any.

At that point lightning struck. One day in April, while checking his mail, Richard Bradley found an envelope sent from Floyd Dominy, acting assistant commissioner of the Bureau of Reclamation and soon-to-be commissioner in his own right. The envelope contained revised bureau estimates for evaporation from the high Glen Canyon alternative and it pegged the rate at 646,000 acre-feet per annum, almost exactly what Dave Brower had calculated. Why Floyd Dominy, of all people, would be assisting the conservationists in a controversy involving his own agency has never been answered (and Floyd isn't talking), but the cat was now out of the bag. Brower had his issue and he kept hammering it home all through the summer and fall of 1954.

It is worth noting at this point that David Brower and the Sierra Club were not proposing Glen Canyon Dam as a substitute for Echo Park Dam—the bureau was already planning on building a dam in Glen Canyon. Nor was Dave necessarily proposing to use high Glen Canyon as an alternative to Echo Park. He was simply using a tactic that every successful debater needs to have honed to an art form—the ability to use an opponent's arguments to build the case against his own proposition. Ralph Tudor, not David Brower, raised the possibility of a high Glen Canyon Dam as an alternative to the Echo Park complex. He introduced it as a way to show that there was no viable substitute to building Echo Park Dam. Dave Brower was simply using Tudor's own hypothetical as a way to demonstrate that there was indeed at least one way to meet every stated objective of the CRSP without sacrificing Dinosaur National Monument in the process. To Brower's credit he was ready with other alternatives as well. He pointed out that the Upper Basin could utilize 70 percent of its allotted water from the Colorado River basin without building a single storage reservoir. Also, as a third alternative he proposed reducing the number of CRSP dams to four (Flaming Gorge, Cross Mountain, Navajo, and Curecanti), thereby providing a cushion of at least 23 million acre-feet of storage. In Brower's opinion that stripped-down alternative would allow for full consumptive use of the water while at the same time allowing sufficient reserve to enable the Upper Basin states to meet the terms of the compact.

The Bureau of Reclamation and the western congressmen on the Interior Committee were aghast! They had never expected to have their arguments successfully countered, least of all by a bunch of butterfly-chasing preservationists. With their evaporation argument in tatters it was imperative that a new line of attack be found, and this would not be easy to devise. The one thing the bureau did not want to admit was that the main purpose for this plethora of dams in the Upper Basin was the production of electricity, power the bureau could sell to raise money for the water delivery systems, such as the Central Utah Project, which were the major purpose of the CRSP. In regions such as the Imperial Valley, where the land could be cultivated year-around and produce real cash crops, the farmers were expected to pay the cost of the water the bureau was sending them. Here in the high deserts of Utah, Colorado, and Wyoming, where it was going to cost the bureau $124,000 to produce a single acre of alfalfa and hay, there was no way the irrigators could be expected to repay a dime of the delivery cost. The bureau, therefore, needed the dams and their electricity as cash registers in order to meet the cost of projects which could never stand on their own. The bureau was not about to admit this, however, at least not in public.

The argument they decided to use centered on the weak and friable rock structure at the Glen Canyon site. In October 1954, Commissioner of Reclamation Wilbur Dexheimer wrote to Richard Bradley that the high Glen Canyon alternative which the conservation alliance was pushing was inherently

unsafe in the Navajo Sandstone. In fact, he went so far as to state that bureau engineers were unsure about the safety of any dam at the Glen Canyon site. Called before the House six months later to explain himself, Dexheimer backpedaled furiously. He explained that while high Glen Canyon was inherently unstable, low Glen Canyon was perfectly safe. Since the difference in height was only thirty-five feet, it was an argument which could be sustained neither by the laws of physics nor common sense. Nobody was buying it.

A half-hearted attempt was made by the bureau to put Rainbow Bridge National Monument in the way. While low Glen Canyon would certainly flood the Kayenta Sandstone gorge beneath the bridge, the high alternative would partially inundate the bridge itself. The bureau had already admitted, however, that even with low Glen Canyon some sort of protective structure would be necessary to shield Rainbow Bridge from the disastrous effects of a fluctuating reservoir; high Glen Canyon would merely add urgency to necessity. The argument was specious and quickly went away.

By mid-1954 it appeared that Brower's three-pronged strategy was paying off. The Great Evaporation Controversy had called into question both the need for Echo Park Dam and the Bureau of Reclamation's own competence in defending it. These early successes reassured and solidified the anti-Echo Park Dam coalition, and thousands of letters had begun to pour into House offices in support of preserving Dinosaur National Monument intact. The controversy was making the House Interior Committee wary of the whole CRSP enterprise and reluctant to take any decisive action at all. The bill, therefore, languished in committee through the remainder of 1954 and landed square in the lap of the newly convened Eighty-fourth Congress early in 1955.

The continued delay emboldened David Brower to an action no one would have contemplated a year earlier. Thoroughly versed by now in every aspect of the CRSP and well-acquainted with many a sympathetic congressman, Brower thought he had the votes to defeat the whole Colorado River project, not just Echo Park Dam. Accordingly, in December, 1954, he approached the Sierra Club board of directors to ask permission for his new strategy. The board was reluctant to grant Dave's request. For one thing, the coalition of organizations so carefully built and nurtured was not happy with the change in objective. Many of the participating organizations had signed on to save the National Park system, not stop development in the whole Colorado River basin. For another, the board was not sure Dave could deliver on his proposal, and the attempt might bring with it ultimate defeat. Accordingly, not only did the board deny Brower's request, but it went one step further and passed a resolution stating that the club was not opposed to any CRSP dam outside of a national park or monument.

Dave was disappointed but not dejected. Victory in Echo Park was within his grasp and the marvelous coalition he had put together was strong and intact. In addition, he had one major card left to play. Brower figured that the capstone of his publicity and public relations effort should be a book which would not only show and explain the issues at stake in Echo Park but also celebrate the National Park idea. As publisher he lined up Alfred A. Knopf, which had a commitment to parks and conservation, and for author-editor he had Wallace Stegner, literature professor at Stanford and one of the foremost western novelists and historians of the day. *This Is Dinosaur: Echo Park Country and Its Magic Rivers* debuted in the spring of 1955 just as the debate over the CRSP was at its peak. Knopf donated enough copies so that one could be placed on the desk of every congressman, and Howard Zahniser of the Wilderness Society camped in the halls of the House Office Building with a movie projector offering continuous showings of Brower's movies, particularly *Two Yosemites*. Congress had never before seen a media blitz of this magnitude. Members were literally besieged by angry constituents demanding that Dinosaur be left alone, and the mail on the issue was overwhelmingly in favor of preservation.

In spite of all this the outcome remained in doubt until the last possible moment. On April 20, 1955, the Senate approved the Colorado River Storage Project, with Echo Park Dam included, by a vote of 58-23. On June 6, John Saylor, a Republican representing Pennsylvania's Twenty-second District and the point man on the Interior Committee for the conservationists, introduced an amendment to delete Echo Park from the bill. It failed, and the prospects looked bleak. However, on June 8, by skillful parliamentary maneuvering, Representative Saylor was able to resurrect the amendment, and this time it passed 15-9. However, the subcommittee attached a rider to the bill requiring a restudy of the whole issue of Echo Park with a report due the president by

the end of 1958. This rider was anathema to the preservation coalition, and they turned up the heat. By now it was becoming increasingly obvious that no bill with even a hint of Echo Park Dam was going to pass the full House, and so on June 28 the full Interior Committee, by a vote of 20-6, deleted the offending amendment. Echo Park Dam was gone for good.

However, the battle was not done. Brower and his coalition partners knew that when the House bill went to conference with the Senate it would be possible to reinsert Echo Park Dam almost by stealth. Furthermore, when the conference committee report came back to the House no amendments would be allowed. Accordingly, the preservationists upped the ante. They demanded provisions in the bill which would prevent Echo Park Dam from ever being considered again, at least not without considerable parliamentary maneuvering, and it was here that muscle-flexing really became evident. The preservationists rounded up the votes necessary to prevent the House from even considering the CRSP bill until appropriate language was added. Brower and his people were thereby able to keep the proposal bottled up for the remainder of 1955.

Western congressmen such as Wayne Aspinall of Colorado and William Dawson of Utah tried to find a little wiggle room, first by pledging not to support Echo Park Dam in the House-Senate Conference Committee and then by pledging to defeat any bill containing the project. The coalition held Congress in an iron grip, however, and as the year ended, it was obvious that unless western senators and representatives relented on this issue there would be no Colorado River Storage Project at all. Word finally came down in December, 1955, that the Upper Basin congressmen were ready to deal. The conservation coalition sent in its most amiable and best-liked member, Howard Zahniser, executive secretary of the tiny Wilderness Society. Howard had worked for the federal government, first with the Biological Survey and then with the Department of Agriculture, finally moving to the Wilderness Society in 1945. He was well-acquainted with the federal bureaucracy and with Congress, so he was the logical choice.

The fateful meeting took place on December 20 in Congressman Dawson's office, and when it was over the coalition had its legislative goals in hand. Inserted into the Colorado River Storage Project Act were the following words: "It is the intention of Congress that no dam or reservoir constructed under the authorization of this chapter shall be within any national park or monument."[36] This provision effectively blocked the authorization of any construction within the boundaries of Dinosaur National Monument without legislative repeal of this language. The Echo Park-Whirlpool Canyon complex was, therefore, never to appear again.

Rainbow Bridge National Monument was also important as part of these deliberations. Not quite satisfied that the above language was sufficient to protect it, conservationists insisted on a second protective provision: ". . . as part of the Glen Canyon Unit the Secretary of the Interior shall take adequate protective measures to preclude impairment of the Rainbow Bridge National Monument."[37] These two provisions, taken together, made it illegal for any water from the proposed reservoir behind Glen Canyon Dam to back under the bridge, and it gave the secretary of the interior the responsibility and authority to see that such a thing did not happen.

With these two protective measures now in the bill the conservationists withdrew all objections, and on March 1, 1956, the Colorado River Storage Project Act passed the House 256-136. The conference committee version, sans Echo Park Dam and with both protective provisions in place, passed both House and Senate on March 28, and on April 11 President Eisenhower signed it into law.

The Bureau of Reclamation lost no time beginning work on the units of the CRSP which Congress had authorized. The first contracts related to Glen Canyon Dam were for the access road to the dam site from Kanab, Utah, and were let within the month. Construction on the dam site itself, which included building the steel arch bridge across the canyon, site preparation for the dam, and the blasting of the diversion tunnels, actually commenced on October 15. The first bucket of concrete was poured at last on June 17, 1960.

In the forty-odd years since the Colorado River Storage Project Act was passed, a huge amount of mythology was built up around Glen Canyon Dam, much of it blaming David Brower and his allies for sacrificing an unknown Glen Canyon in favor of preserving the somewhat less scenic but better-known canyons of the Green and Yampa in Dinosaur National Monument. Unfortunately, some of this mythology has been printed in otherwise well-researched books and articles. Phil Fradkin writes, "In the early

Figure 48: First bucket of concrete, Glen Canyon Dam

1950's there were plans for a dam in Echo Park but conservationists succeeded in blocking it and the site was switched to Glen Canyon."[38] Russell Martin states that David Brower believed and stated publicly that ". . . as long as little Rainbow Bridge National Monument . . . was protected, Reclamation ought to build Glen Canyon Dam to the very rim of the canyon walls."[39] Not even the *Sierra Club Bulletin* was immune. Commenting in 1973 on the Echo Park controversy it wrote, "The damsite has been moved to a remote little-known place called Glen Canyon . . ."[40] Each of these statements betrays a serious lack of knowledge concerning the history of water planning and development in the Southwest and a gross misunderstanding of the role Glen Canyon Dam was to play in the whole Colorado River equation.

The fact is, of course, that the dam in Glen Canyon was no last-minute substitute for the Echo Park-Whirlpool Canyon complex. Glen Canyon had been in the bureau's plans from the beginning and was the key element in the whole picture. By capturing the entire runoff from the whole Upper Basin, it made precise regulation of the river into the Lower Basin possible, and its huge storage capacity was the hedge the Upper Basin needed against the dry years which would surely come. With the large reservoir in place, Utah, Colorado, and Wyoming could divert water from the basin for agricultural and industrial uses without having to worry about the flow of the river dropping below the required 7.5 million acre-feet per year specified in the compact. By contrast, Echo Park was a very small fish in a very large pond. Its comparatively tiny reservoir would have had no measurable impact on the CRSP's total storage capacity, and with Flaming Gorge Dam just upstream its effect on river regulation would have been minimal.

Echo Park's sole reason for being was the generation of electricity, a function which at Glen Canyon was a mere sidelight. The only observable effect the deletion of Echo Park Dam had on the CRSP was to alter the bureau's repayment schedule for construction of its water delivery network, and the bureau was not about to defend the despoliation of a highly scenic national monument as an accounting gimmick. Hence, the government simply had no adequate fallback position once Brower and his allies had shredded its evaporation rate hypothesis, and the conservation alliance found the bureau's feeble arguments easy to push aside.

That the tool David Brower used to demolish the bureau's argument for the necessity of a dam at Echo Park happened to be a higher-than-planned dam in Glen Canyon was perhaps unfortunate, but it was an argument handed to him by the Bureau of Reclamation itself and he would have been foolish not to use it. It is also crucial to remember that the alternative the "Save Dinosaur" crowd was using was not Glen Canyon Dam itself but a simple increase in the height of the planned reservoir. The high Glen Canyon structure Brower and his friends were pushing was a mere 5 percent higher than the dam the bureau was already planning to build anyway. The most telling argument, however, against those who would blame David Brower for the eventual inundation of Glen Canyon is that the high Glen Canyon Dam, which the preservationist forces were using throughout most of the debate on the CRSP, was never built. When the debate was finished and the project authorized by Congress, the Bureau of Reclamation went out and built, without variation, the dam in Glen Canyon that they had always planned to build. Hence, the net result of Brower's arguments was the deletion of the Echo Park-Whirlpool Canyon complex from the CRSP; the net effect on the bureau's plans for Glen Canyon was nil.

A more poignant but no less false assertion is that the Sierra Club failed to fight the construction in Glen Canyon because of total ignorance concerning the scenic wonders the dam and its reservoir would utterly destroy. While it is certainly true that Glen Canyon was not a widely known and appreciated wonder, it was not exactly "the place no one knew." Tour guides such as Ken Sleight, Norm Nevills, and Art Greene had been ferrying paying customers down the Colorado and through Glen Canyon for decades before the debate erupted, and it seems fair to assert that many more people had seen Glen Canyon than had ever boated the Green and Yampa Rivers through Dinosaur. Wallace Stegner, a Sierra Club member, leader in the fight to save Echo Park, and editor-author of *This Is Dinosaur*, had floated Glen Canyon twice and had been mesmerized by the experience. He told Dave Brower that the fight over Dinosaur was a no-win situation for conservationists, that even if Echo Park were saved a much more scenic and glorious place would almost certainly go under.

Back in Utah, forces were mobilizing to keep Glen Canyon as well as Echo Park free from dams. A smattering of river runners, canyon country enthusiasts, and outdoor activists led by Al Quist, owner of Moqui Mac River Expeditions, and Ken Sleight formed the Friends of Glen Canyon in an effort to focus at least some attention on a place they felt was getting short shrift.[41] In June, 1954, they sent a delegation to Washington and actually got a hearing before a Senate committee, where they urged the creation of Glen Canyon National Park. They extolled the beauty of the canyon to anyone that would listen, including Dave Brower and his allies, but in the end their voice was too faint and their influence with the Washington power structure virtually nonexistent. The preservationist alliance was certainly sympathetic but felt that saving a place which was actually protected as part of the National Park system had to take precedence.

As has been shown already, David Brower went to the Sierra Club board in late 1954 to ask permission to change tactics and attempt to bring the whole CRSP bill to a grinding halt. To this day Dave believes that had the club backed him he could have at least forced a drastic reworking of the whole Upper Basin water plan and thereby saved Glen Canyon. There is no question that anti-CRSP sentiment in the House of Representatives was large and growing. California lawmakers were perfectly happy to see the Colorado River flow undiminished and unregulated through Grand Canyon and into Lake Mead; midwestern farm states were not at all pleased to see billions in tax money spent to grow crops that were already in surplus; genuine conservatives were appalled that the first Republican administration in twenty years was actually pushing through Congress the largest load of pork since the New Deal. However, with the benefit of hindsight it seems obvious that David Brower could not have stopped the development of the water resources in the Upper Basin, at least not permanently. The pressures for

development were simply too great to overcome, and the national obsession with the preservation of natural landscapes, which is so much a part of the current political climate, was, in the 1950s, nowhere to be found. Fueled in part by military and other defense-related spending, Utah's economy began to boom both during the war and afterward, and its rapidly expanding population was putting a premium on both water and electricity. That the development-minded '50s generation would simply let the Colorado and Green Rivers flow undeveloped into the Lower Basin was, therefore, unthinkable. Had Brower stopped the CRSP in 1955 it would have been back in 1956 or in some subsequent year, perhaps in altered form, perhaps not. In any case, water resource development in the Upper Basin, at least under terms dictated by the Colorado River Compact, was absolutely dependent on a dam in Glen Canyon.

Dave Brower realized this in May, 1954 when, speaking before the Water Resources and Power Task Force of the Hoover Commission in San Francisco, he stated, "I do not think there will ever be any alternate found for Glen Canyon reservoir. That is such an important part of the whole Upper Colorado project I don't see how even the nature-lovingest person of all . . . could find a way to save that."[42] Dave had it exactly right back then, so his subsequent suggestion that Upper Basin water might be stored in Lake Mead really misses the point. The Law of the River is quite specific in asserting that all the water flowing past Lees Ferry, Arizona, belongs to the Lower Basin states. The compact has the binding force of a treaty, and, therefore, it would take much more than an act of Congress to change that reality. Hence, for all practical purposes the fate of Glen Canyon was sealed on that November day in 1922 when the Colorado River Commission decided to divide the waters at Lees Ferry. The subsequent destruction of one of the most beautiful places on earth rankles nature lovers and environmentalists to the core and will continue to be an open wound for generations to come, but there is no excuse whatever for laying the blame at the doorstep of either David Brower or the Sierra Club.

With all this in view, was there no way that Glen Canyon could have been saved? Back in the late 1930s a small opening presented itself and came agonizingly close to succeeding. In June, 1936 Franklin Roosevelt's secretary of the interior, Harold Ickes, proposed a huge new national monument in southern Utah. Encompassing 6,968 square miles, it would have included almost all of today's Grand Staircase-Escalante National Monument, Canyonlands National Park, Glen Canyon National Recreation Area, and more besides, amounting to nearly 8 percent of the total area of the state of Utah. After running into fierce opposition from local cattle ranchers and the State Planning Board, the proposal was pared down in 1938 to 2,450 square miles, hugging closely the Green and Colorado Rivers from Mineral Canyon and Moab on the north to Lees Ferry on the south. The new proposal actually attracted considerable local support but ran into delay and difficulty over language state authorities wanted inserted into the proposed presidential proclamation which would have guaranteed the right to future power and mineral development inside the monument. The outbreak of World War II caused an understandable shift in Interior Department priorities from conservation to development, and the Escalante national monument proposal went on the shelf, never to return.[43] Had the area been part of an officially designated park or monument it might have been possible to save it; without any official status tucked away in one of the most remote and desolate corners of the country, there is little anyone could have done to save Glen Canyon from its fate.

Instead of concentrating on what the conservationists of the time failed to do, it might be wise instead to contemplate what they accomplished. It is probably no exaggeration to state that the battle over Echo Park and Rainbow Bridge in the 1950s shaped in large measure the environmental future of the United States. Those who were aware of the Bureau of Reclamation's plans for the Southwest were absolutely convinced, probably correctly, that if Echo Park were dammed, the national park ideal in this country would drown with it. A very bad precedent had been set when Hetch Hetchy Valley inside Yosemite National Park was flooded to provide water and power for San Francisco, and it was feared that a second such intrusion would prove fatal. As Mark Harvey has written, "Conservationists regarded Echo Park Dam as a great test. To let it be built would be to surrender to all similar efforts threatening parks and wilderness lands."[44] Hence, what David Brower and his colleagues were defending was not a single canyon in a remote corner of Utah, but rather the integrity of all those places which had supposedly been set aside in perpetuity.

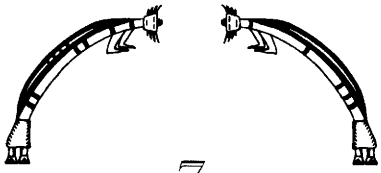
In defending the idea of a national park as a refuge of wilderness and unspoiled beauty, Brower struck a nerve in the conscience of the American public and was thereby able to rally a powerful coalition to his cause. Mark Reisner is certainly wrong when he attributes the salvation of Echo Park to "Brower and a handful of conservationists."[45] The army of supporters which Brower was able to muster is even today the largest single-issue coalition ever to confront a congressional proposal. Ordinary Americans by the tens of thousands called and wrote their congressmen on this issue, not because they had floated or ever expected to float the rivers in question, but simply because national parks and monuments and the ideas behind them were too important to admit despoliation. The issues, then, were not primarily about scenery or recreation; rather the crux of the argument was that within those arbitrary lines drawn on a map the kind of development being proposed by the Bureau of Reclamation was simply unacceptable.

Of course, none of this would have mattered had it not been for the bulldog tenacity and unerring instincts of one man, David Ross Brower. By rejecting the counsel of his closest advisors and confronting the bureau's arguments head on, Dave revealed himself to be a brilliant tactician and a master of logical argument. Interestingly enough, the experience he gained in the Echo Park fight translated directly to the tactics he was to employ a decade later when once again he was to face the Bureau of Reclamation in battle, this time over proposed dams in the Grand Canyon.

Dave was privileged to float through Glen Canyon three times before the gates at the dam finally closed and this beautiful, gentle canyon became only a treasured memory. The loss of this place was to haunt his dreams for decades thereafter, but it only steeled his resolve that, at least on his watch, this tragedy would not be repeated elsewhere. In *The Place No One Knew* he penned perhaps the most heartfelt requiem ever composed to a locale which should have been saved but wasn't. The result is that today "Remember Glen Canyon" is a rallying cry for preservationists the world over.

Figure 49: Glen Canyon near Hidden Passage, 1955

> Bridge Creek joined Aztec Creek, and Aztec and a hundred others the Colorado, where a bank beaver had a home but his progeny will not. For the flood has come that does not recede and the natural world will miss what the ages built here, and here alone. Just a few miles below this junction a great dam is at work. Not to put water on land. Not to control the river. Not to save water in an arid land. But to divert the force that created beauty, to generate kilowatt hours of electricity instead. For a replaceable commodity we spent this irreplaceable grandeur. Your son may pass close to it. But neither he nor any man yet to be born will ever know it, nor will the intimate things that gave this place its magic ever again know the sun.[46]
>
> . . .
>
> This we inherited and denied to all others. The place no one knew well enough.[47]
>
> —David R. Brower



7

The Sierra Club Goes to War

With the enactment of the Colorado River Storage Project Act in 1956 the long battle over the nature and parameters of water development in the Upper Basin came to an end, and the leaders of the newly empowered American preservationist movement prepared to strike their tents and head home. These men must have left Washington, D.C., filled with pride and satisfaction over what, against all odds, they had been able to accomplish. True, the Bureau of Reclamation had been able to persuade Congress to authorize a series of major dams and storage reservoirs, and all too many remarkable places would soon disappear forever under tons of silt-laden greyish waters, but the government had been stopped cold at the boundaries of the National Park system both at Dinosaur and Rainbow Bridge. The point had been made that these jewels of the American landscape were off limits to massive commercial development and out of bounds where the intrusion of man-made reservoirs was concerned. Dave Brower and his associates had made sure of that by insisting on the inclusion of strong, binding language which could not be misconstrued and which would now be most difficult to repeal. The American people had spoken with one voice, and everyone was sure that western congressmen and their reclamation allies had gotten the clear message—keep your damn dams and grubby reservoirs out of our parks.

However, the legislative provisions which protected Dinosaur and Rainbow Bridge were at opposite poles in their effect. At Dinosaur the government was prohibited from building a dam; at Rainbow Bridge, by implication, the bureau would need to construct one. The same act which prohibited any reservoir water from entering Rainbow Bridge National Monument also authorized the construction of Glen Canyon Dam, and the structure the bureau had already begun to build was designed to fill the canyon to an elevation of 3,700 feet. The lowest point in the national monument, a quarter-mile downstream from the bridge, was at elevation 3,606.1 feet, and the canyon bottom directly under the Great Rock-Arch was at 3,654 feet. If left to back up unimpeded, the reservoir, later to be named Lake Powell, would push stagnant water through the very heart of the monument and beyond, leaving Rainbow Bridge spanning a pool forty-six feet deep. It seemed obvious to everyone from conservationist to reclamationist alike that the only way to meet all the parameters of the act was to build a barrier dam in either Bridge Creek or Forbidding Canyon somewhere downstream from the monument. It was clear that the bureau had already given some thought to the matter, because in hearings before the House Interior Committee during the CRSP debate the government had stated,

> We can build the necessary works to protect the bridge in the manner suitable to the National Park Service and others that are interested, within the amounts of money that we have estimated in our overall estimate for the Glen Canyon Dam and reservoir, and we have no question about the economic, engineering, or practical feasibility of taking care of that monument.[1]

(The fact that bureau engineers had already figured the cost of protecting Rainbow Bridge into the cost of the Glen Canyon project is significant because later this same agency would claim that the required protective works were simply too expensive.)

With the necessity of building a barrier dam written into law, the Department of the Interior, now under the very able leadership of Frederick Seaton, was not slow to act. Almost simultaneous with the site preparation work in Glen Canyon, engineers were doing detailed mapping and sampling in the canyons below Rainbow Bridge in an effort to solve the engineering and technical problems associated with the new project. For Floyd Dominy, associate commissioner of reclamation and soon-to-be commissioner in his own right, this was the ultimate irony. The same people who had fought his agency's dams for over a decade now actually wanted him to build them one. His sense of the contradictory was further heightened by the fact that, unlike most of his preservationist nemeses, he had actually been to the bridge. He had ridden a mule down the hot, dusty trail from Navajo Mountain in midsummer, an experience he later claimed had nearly killed the mule. Well, he mused, if the conservationists really wanted him to build them a dam, then he would build them the best one he could. He put bureau engineer Lloyd Calder in charge of the project, and by August, 1959, a preliminary report was ready for consideration.[2]

The bureau identified four sites in Bridge Creek and Forbidding Canyon which could serve as locations for a barrier dam. Obviously, a structure at any one of these locations would have to have the same crest elevation (3,715 feet) as Glen Canyon Dam in order to keep lake water from overtopping it, so the further upstream one could place the barrier dam the smaller, and cheaper, such a structure would be. Conversely, however, once the barrier dam and Lake Powell were both in place, water from upstream would begin to pool against the back of the barrier dam. This problem could be partially solved by pumping this unwanted pool over the dam into Lake Powell or by locating a second barrier dam upstream from Rainbow Bridge and disposing of the water currently in Bridge Creek by shunting it into another drainage. In either case, however, sufficient storage would need to be provided on the upstream side of the barrier to provide for floods and seepage. Otherwise water would back from the barrier dam into the monument, thereby creating the very problem the whole project was seeking to avoid.

Site A was located only 1,500 feet downstream from the monument boundary. It would require a dam 148 feet high with a crest length of 375 feet, but its upstream storage capacity of 33 acre-feet was deemed much too small to keep floodwater and seepage out of the monument. A second major problem with site A was that floods coming down Bridge Creek would deposit rocks and debris sufficient to fill this tiny upstream storage capacity in less than forty years, after which all water coming down Bridge Creek would pool inside the monument. Clearly, then, if site A were selected a second barrier dam on Bridge Creek above Rainbow Bridge National Monument would be needed to keep almost all water from the vicinity of the bridge.

Site B was located 3,200 feet below the monument boundary just above a major side canyon of Bridge Creek. This dam would have to be 183 feet high with a crest length of 500 feet. It would provide an upstream storage capacity of 313 acre-feet which would, in comparison to site A, dramatically reduce the pumping necessary to keep the backside pool out of the monument. However, without a second barrier dam upstream from the bridge debris would fill even this much larger basin in only forty-one years.[3] Hence, selection of this site, as at site A, would require a second barrier dam and would result in the total dewatering of Bridge Creek within the monument.

The Narrows site was located just above the junction of Bridge and Aztec Creeks. It would require a dam 250 feet high but only 50 feet wide, which made it economically very attractive. However, the canyon walls here overhung the stream on both sides, which presented construction problems, and there were also structural flaws in the adjacent sandstone which the engineers found problematic. Hence, the Narrows site was never considered seriously as a workable alternative.

Site C was located on Aztec Creek a mile and a half above the Colorado River. A dam here would have been a large one—365 feet high with a crest length of 800 feet. In fact, an earthen dam at this site would have required 5 million cubic yards of material, very nearly the volume of Glen Canyon Dam itself. However, the bureau was careful to note that this site was suitable for a concrete arch dam if sufficient aggregate to mix with the concrete could be found nearby.[4] Of the three sites actually considered technically suitable, this was the only one which would not require an upstream diversion dam. The basin between the monument boundary and site C held twelve thousand acre-feet of storage capacity, which the bureau estimated would last 213 years. The bureau also believed that by using minimal pumping

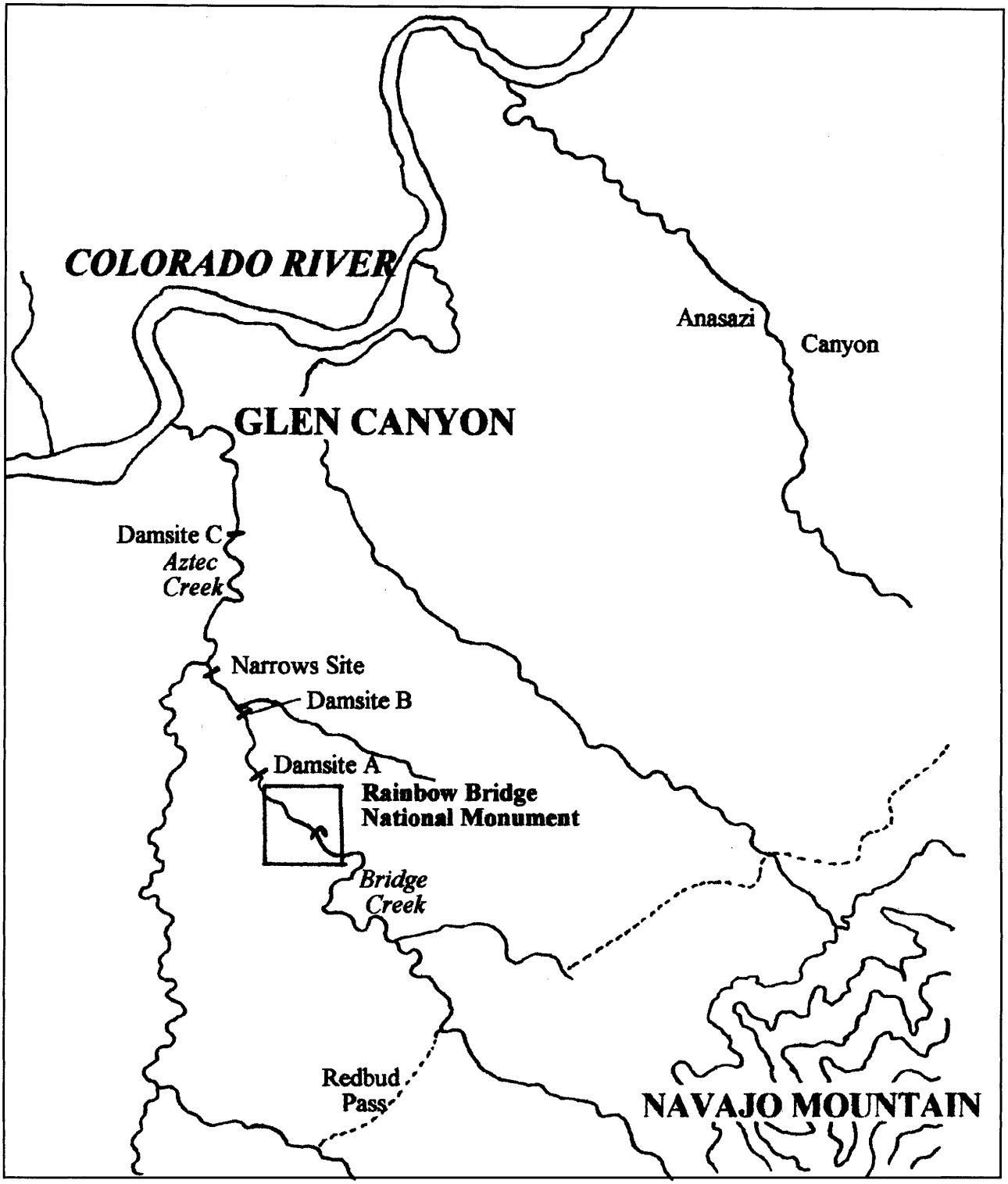


Figure 50: Map of Rainbow Bridge country showing the approximate location of the four sites proposed by the Bureau of Reclamation as suitable for construction of the barrier dam necessary to protect the bridge from the waters of Lake Powell.

Figure 51: Aztec Creek joins the Colorado in Glen Canyon, 1953. Site C, the conservationists' preferred alternative for the barrier dam protecting Rainbow Bridge, was just over a mile up Forbidding Canyon toward the top of the photograph.

together with normal evaporation, a stable reservoir with surface elevation at 3,570 feet could be maintained upstream of the dam in Aztec Creek. This would mean that when Lake Powell was full the site C dam would have a reservoir 350 feet deep on the downstream side and one 220 feet deep on the upstream side.

The bureau never liked site C for three reasons. First, the engineers weren't sure about the physics and hydraulics of a dam with a large pool on both sides. They felt that models would have to be built and tested, a necessity requiring both time and money. Second, the outlet tubes on Glen Canyon Dam, the only devices which could be used to regulate the height of Lake Powell, were set in the design at an elevation of 3,490 feet, a full 140 feet above the site C stream bed. Hence, once the gates on the diversion tunnels at Glen Canyon were closed the reservoir would inundate site C, and since this was scheduled to happen well before construction here could be completed, selection of this location would mean pushing back the filling schedule for Lake Powell. This was something the bureau was not even willing to consider. Third, the bureau believed that the material for so large a structure was not available on location, necessitating long and expensive hauling from remote sites.

Of course, dam building involves labor-intensive heavy construction, and in this magnificently dissected and tortuous country, getting men and material to any of the three sites would be a major project all by itself. Access to sites A and B might be had by following the old Richardson road north from Tonalea, Arizona, into Utah and then swinging

around the east end of Navajo Mountain using the approximate route of the old Wetherill Trail into the drainage of Bridge and Aztec Creeks. This would be a long and expensive route necessitating blasting through solid rock, the bridging of several deep canyons, and the installation of numerous culverts to handle runoff through the many small ravines draining the high country. However, from an engineering standpoint it would be straightforward roadwork with few unusual problems.

Access to site C was possible via either of two possible routes. One was simply an extension of the Hole-in-the-Rock road, which ran southeast from Escalante, Utah, to the old Mormon crossing of the Colorado River. From Fifty-Mile Point the new route would turn south around the Kaiparowits Plateau and then descend into Glen Canyon opposite the mouth of Aztec Creek. Here it would be necessary to bridge the Colorado and then continue up Forbidding Canyon to the dam site. A second route in would angle north from the newly constructed highway, U.S. 89, between Kanab and Glen Canyon. The route would traverse the narrow flats under Smokey Mountain and Sit-Down Bench, again reaching Glen Canyon near Aztec Creek. While presenting no significant design or construction problems, these routes would be expensive. In fact, it was estimated at the time that the cost of road construction might well equal the cost of the barrier dam itself.

After considering all the advantages and problems associated with each site, the bureau came down in favor of site B, augmented with a second dam located on Bridge Creek a half-mile above the monument boundary. The purpose of this additional dam would be to divert all the water flowing down Bridge Creek west into the drainage of Aztec Creek, accomplishing this by means of a tunnel nearly a mile long and twenty-one feet in diameter. The tunnel would slope downhill between the canyons, so no pumping would be required.[5]

The diversion dam would be 40 feet high with a crest 275 feet long requiring 47,000 cubic yards of earth and rock, all of which could be obtained locally. The material for the dam at site B would come from the top of a high mesa adjacent to Rainbow Bridge. Excavation equipment could, according to the bureau, be lifted onto the mesa via large transport helicopters, and the fill material carried off the north end of the plateau via a conveyor system. Government engineers had clearly done their homework; the plan was neat, practical, and clearly within the parameters set forth in the Colorado River Storage Project Act to "prevent impairment of Rainbow Bridge National Monument." Under this plan, the monument would be touched by neither the reservoir nor any construction.

Just to be on the safe side and to deflect any criticism that the government was simply pushing its own preferred solution, the bureau hired a consultant, eminent geologist Wallace R. Hansen, to look over the preferred site and to issue an opinion. Dr. Hansen was in the monument area from September 23 to 25, 1959, in the company of J. Niel Murdock, regional geologist with the Bureau of Reclamation, and James Eden of the National Park Service. The group visited the site of the barrier dam in Bridge Creek, the site of the diversion dam upstream from the monument, and the outlet portal site in Aztec Creek, ignoring completely the site C location about four miles away. In his report to the bureau Dr. Hansen stated, "Site B was examined rather closely, and its adequacy, insofar as geologic factors are concerned, appears to be beyond question."[6] He was less certain concerning the bureau's figures on seepage, which would inevitably occur both through the dam and around it, recommending that plans be made for a higher level of pumping than was being considered. On the necessity of building the upstream diversion works, Dr. Hansen was adamant:

> Unless diverted out of Bridge Canyon via the proposed diversion dam and tunnel to Aztec Creek, sediment consisting of boulders, cobbles, gravel, sand, silt and driftwood, therefore, would accumulate ultimately throughout the length of Bridge Creek in the monument up to the high-water level of the reservoir at an altitude of 3,700 feet and in fact to greater heights as the deposits would gradually agrade headward. Aside from the detrimental effect such sediments would have on the natural appeal of the monument, they would in time reduce the effective height of Rainbow Bridge by approximately 50 feet.[7]

The solution proposed by the bureau had no loose ends—it would accomplish what the law required and seemed to present no insolvable technical difficulties. From an environmental viewpoint, however, the plan was far from benign. The national monument would remain unscarred, but it consisted simply of a square, a half-mile on a side, with Rainbow Bridge at its center. Surveyed by William B.

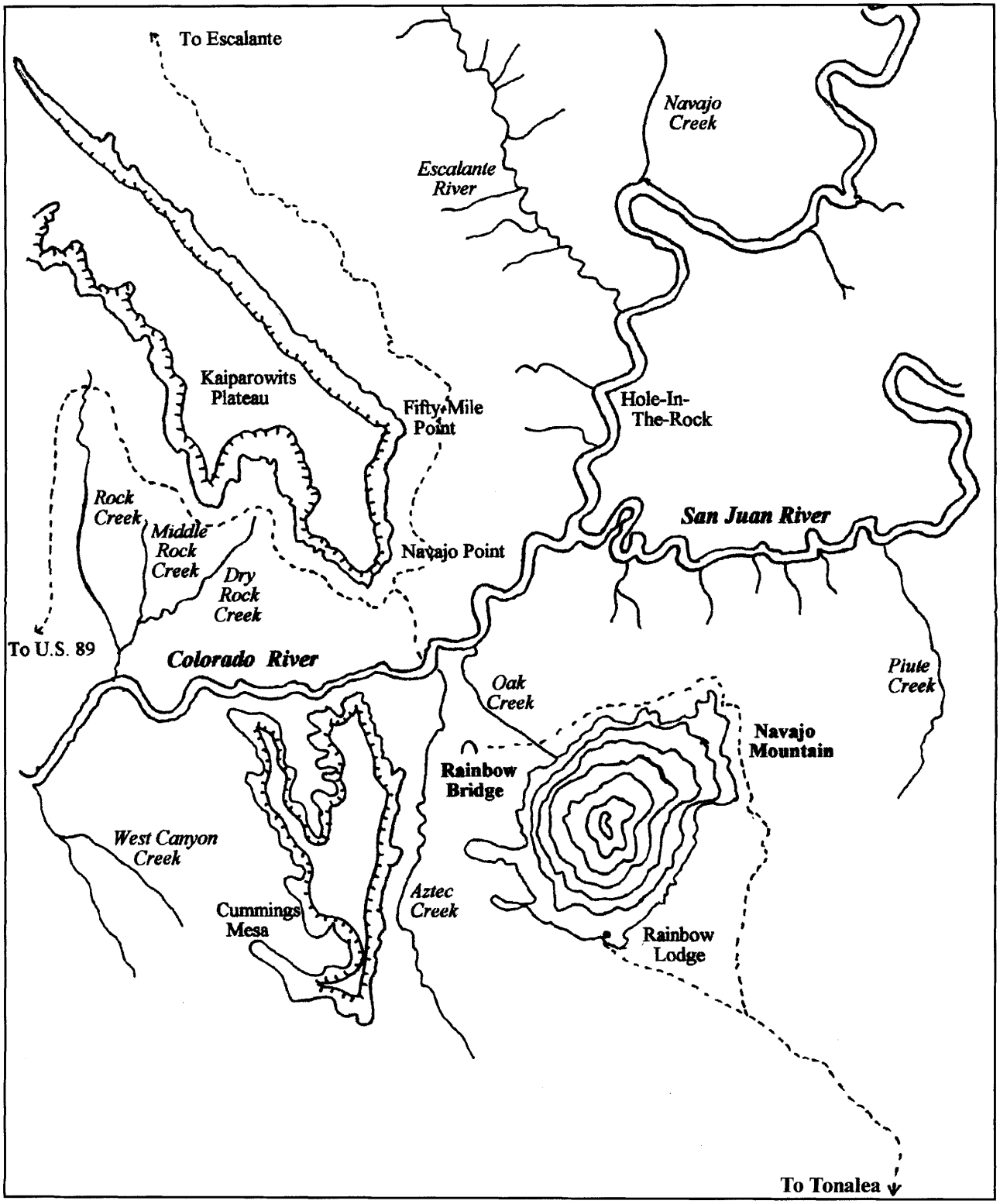


Figure 52: Map of the vicinity of Glen Canyon showing the three proposed routes into the possible dam sites.

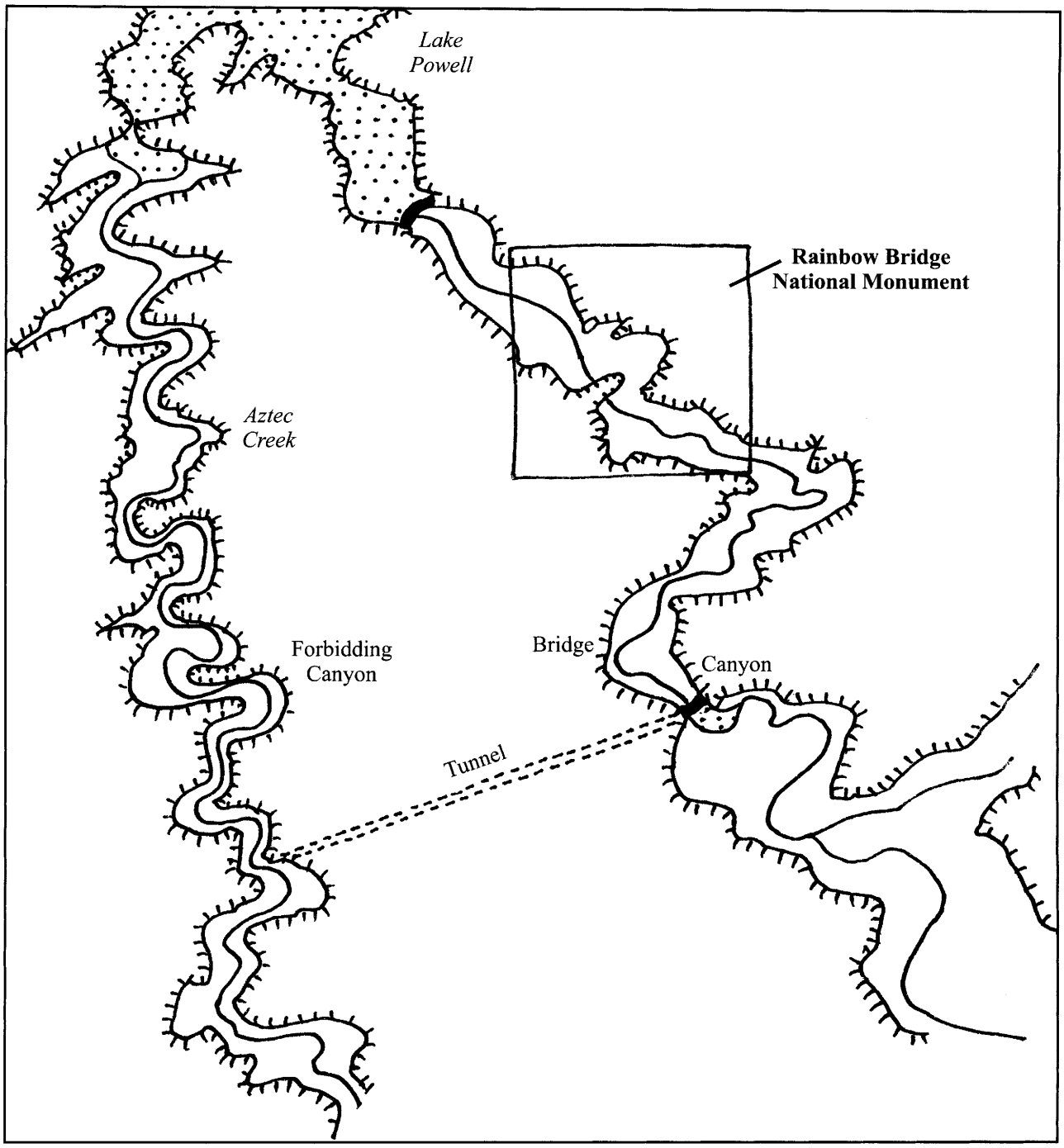


Figure 53: Diagram of Bridge and Aztec Creeks showing the approximate location of the site B barrier dam, the diversion dam, and the tunnel linking Bridge Creek with Forbidding Canyon.

Douglass in 1909–1910 to shield the immediate vicinity of the bridge from appropriation under the Mining Law of 1872, its boundaries bore no relationship to the surrounding topography whatsoever, and under the bureau's plan the essentially pristine character of this magnificent land would be indelibly altered. Aside from the intrusion of two dams and a tunnel, the project would necessitate a large construction camp to house men and machinery, a heliport for the transport choppers, high-standard roads, and at least one electric line to bring power to the pumps at the barrier dam. All of this would leave its mark for generations after the work was finished, essentially framing Rainbow Bridge as an island of wilderness within a sea of development.

Of course, all parties planning for whatever structures might be built knew that nothing would be accomplished without the acquiescence and cooperation of the Navajo Tribe. Aside from the 160 acres within the boundaries of the national monument, all this land was Indian country, part of the Navajo Reservation since 1933, so all dams, power lines, roads, and tunnels would need approval of the Navajo Tribal Council before construction could actually begin. Hence, in 1958 the Department of the Interior formally applied to the tribe for easements and rights of way to accomplish the protection of Rainbow Bridge. At the same time the Park Service requested a land exchange with the tribe for the purpose of adding approximately one hundred acres to the monument. The proposed addition would have extended the monument to the east another half-mile so as to include the spring and alcove at Echo Camp, which the Park Service was eyeing as an official campground. The Tribal Council responded via a resolution which said, in part,

> The Department of the Interior is hereby granted rights-of-way and easements for construction and maintenance of barrier dams and diversion tunnels to protect Rainbow Bridge from inundation . . . The addition of 100 acres to the Rainbow Bridge National Monument, as requested by the Park Service, is not in the best interests of the Navajo Tribe at this time.[8]

(The Park Service was to continue trying to accomplish this boundary adjustment for the next dozen years. Each attempt was rebuffed by a succession of tribal administrations.)

The conservation community, which had worked so hard to see to it that development of the CRSP did not impinge on the National Park system, were skeptical of the bureau's plan. For them the clear choice was site C, which, from an environmental viewpoint, had some obvious advantages. First, it was miles away from Rainbow Bridge, so all activities relative to construction would not be nearby. Second, access to the site could be had from the north and west via Kanab or Escalante, Utah, leaving the Navajo Mountain region and the old trail system roadless and intact. Third, site C required no Bridge Creek diversion dam or tunnel—Bridge Creek would continue to flow through the monument, thereby preserving the creative force which made the bridge and which would thereby continue to shape its future.

For the Bureau of Reclamation, a dam at site C was never under serious consideration, and the reason was very simple—time. Government engineers felt that by the time they were ready to actually begin construction at site C the reservoir behind Glen Canyon Dam would have already flooded the locale. The bureau, which was anxious to begin producing power (and revenue) from Glen Canyon's turbines, was not about to revise the fill schedule for Lake Powell for anything short of a presidential directive. In public the bureau's arguments against site C focused on peculiar difficulties inherent in the location, the large size of the site C dam compared with the preferred structure at site B, and the attendant greater cost. However, beneath the public façade was the real issue—Lake Powell would almost certainly not reach site B until early 1970, if then, so the reservoir could fill as construction at the site B location proceeded. The site C dam would have to be in place before the gates at Glen Canyon Dam were closed.

This would be a fight in which Congress was not likely to intervene. Congressmen generally had no engineering expertise, so they usually accepted what they were told by the Department of the Interior and the Bureau of Reclamation in budget requests for particular projects and in oral testimony delivered at hearings. The call on this one, then, would probably be made by the secretary of the interior, who had both the Bureau of Reclamation and the National Park Service within his jurisdiction. It was known within conservation circles that the Park Service was privately lobbying Secretary Seaton to recommend site C, and so it was felt that a little positive publicity in that direction might tip the balance.

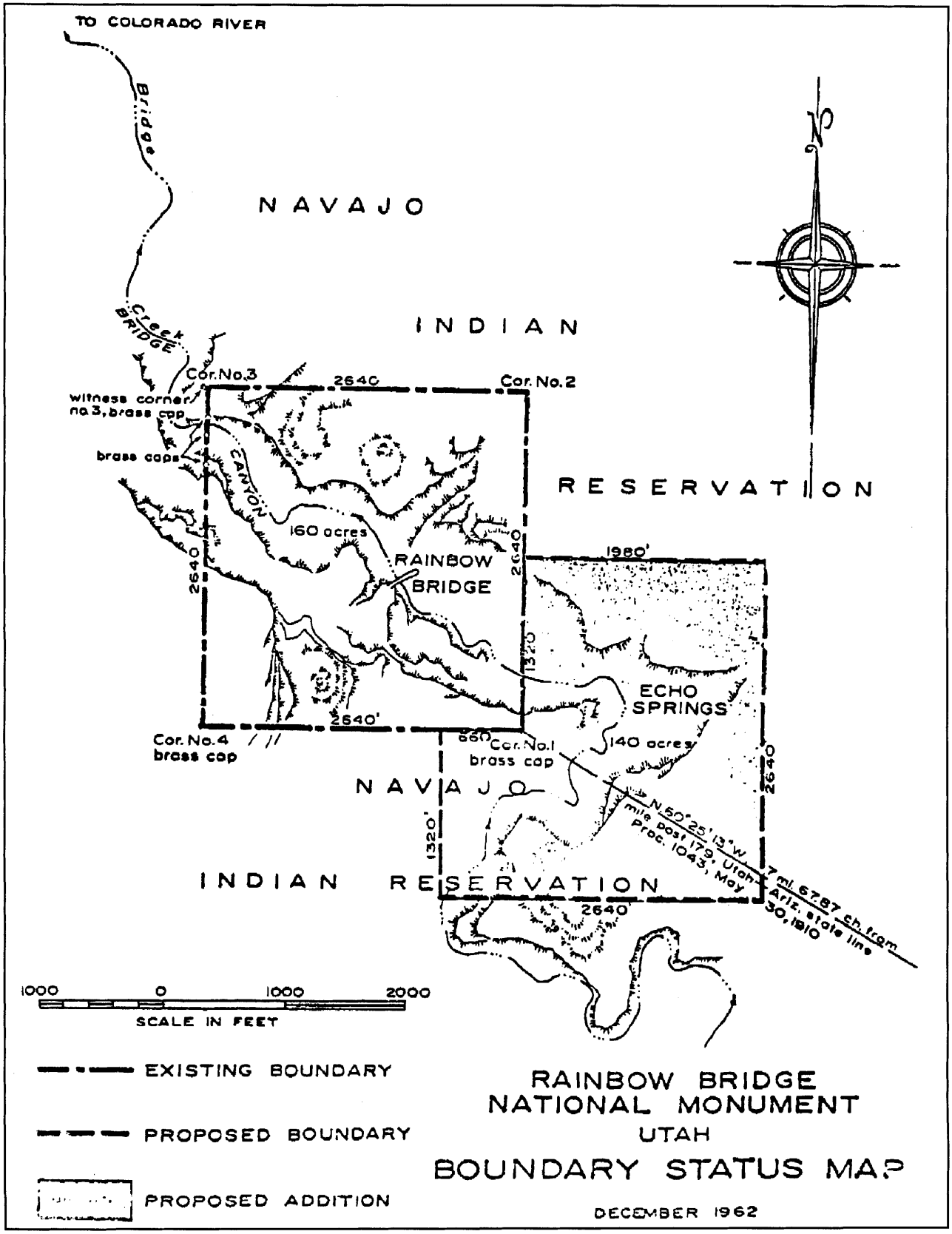


Figure 54: Boundary status map

Accordingly, Arthur B. Johnson, a registered professional engineer and a fellow of the American Society of Civil Engineers, was prevailed upon to analyze, and hopefully counter, the bureau's arguments against site C. The analysis he produced was rigorous, detailed, and countered every one of the bureau's arguments against the site. Johnson found that by changing the dam's location just slightly the crest length could be reduced from 800 feet to 420 feet, thereby reducing the volume of the dam by nearly half. He concluded, therefore, that an earthen dam at this location could be constructed easily and economically, and, interestingly enough, within the time frame the bureau had established for the filling of Lake Powell.[9] A sizable alluvial deposit located just downstream from the site could be expected to provide two to four hundred thousand cubic yards of material for the dam's impervious core, and several quarries located below the 3,700-feet elevation line could provide the necessary rock fill. The bureau had argued that the materials available on site did not contain sufficient clay and were too fine to make a good core for the dam, but Johnson countered that argument by stating,

> The . . . alluvial deposits repose at quite steep angles. For the deposits to have resisted the cloudbursts the area is subject to and retained those slopes indicate the existence of substantial binder material. Numerous animal trails also attest to its strength . . . Mother Nature's answer is that the deposits are of adequate quality.[10]

For access Johnson proposed upgrading Hole-in-the-Rock road from Escalante, Utah, thereby limiting new construction to the final twenty miles necessary to reach site C. He estimated that upgrading fifty-seven miles of existing road to haul standards, constructing twenty miles of new road, and bridging the Colorado at river level could be done for about $2 million, far less than what it would cost to get a road into site B. Johnson also proposed using diesel pumps to keep the upstream pool in Aztec Creek as low as possible, this in contrast to the bureau's proposal to maintain a fairly substantial lake on the upstream side. By his estimate, the installation of four 3,000-gallons-per-minute pumps could send a year's expected flow from behind the dam into Lake Powell in two to three months. Periodic dredging of the rocks and silt left by flash floods could keep the upstream storage area virtually free of debris and would extend the effective life of the barrier dam by centuries. He even went so far as to suggest a topographically logical route along the canyon rims for the construction of a new trail to Rainbow Bridge. Best of all, Johnson's estimate of the maximum cost of the project, including access roads, fuel, and all construction expenses, came out to just over $17 million.[11] Since the bureau's estimate for construction at site B was $20–$25 million, the argument that site C was simply too expensive was effectively demolished.

The proposal Arthur Johnson submitted had enough detail that it could have been used to prepare the final construction plans, but the Bureau of Reclamation remained unimpressed. For one thing, Johnson was arguing that building and testing of models was a waste of time, that needed analysis could be done in the lab. Bureau engineers felt, perhaps rightly, that in a project this unusual, with water pooling on both sides of the dam, a speculative analysis would simply not do. Then there was the matter of time. Even Johnson admitted that completion of the site C project within the bureau's time frame for filling Lake Powell was tight. Since major construction projects rarely went according to plan, the bureau was virtually certain that Johnson's schedule would not be met. Hence, Floyd Dominy, who had become commissioner of eclamation in May, 1959, continued to insist that site B was the only one under consideration. Since Secretary Seaton was maintaining a discrete silence on the issue it was assumed that he was taking Reclamation's advice.

Strangely enough, it seems that while site C was far and away the preferred option for the leaders of the major conservation organization, there was no outright rejection of Reclamation's site B proposal and, aside from Arthur Johnson's very thorough analysis, no large-scale lobbying effort in Congress or at the Bureau of Reclamation to try to defeat that site. The attitude appeared to be that while site C was better in almost every respect, site B was within acceptable parameters and would, therefore, not be actively opposed. Conservation leaders seemed to be of the opinion that preservation of the principle as set forth in the Colorado River Storage Project Act was more important than the details concerning how that principle would be maintained. If protecting Rainbow Bridge National Monument from intrusion

by Lake Powell meant the sacrifice of the surrounding wilderness, then so be it.

Not all individuals were quite so intent on preserving that principle, however, and one of them was Dr. Angus M. Woodbury, professor emeritus of biology at the University of Utah and a member of the Glen Canyon Salvage Project. In an article published in the journal *Science*, Dr. Woodbury argued that doing nothing was actually preferable to scarring the surrounding landscape by massive construction at site B. He noted that the geologists at the Bureau of Reclamation had already stated that water from the reservoir posed no threat to the structural integrity of the bridge.[12] Therefore, the only permanent damage to occur as a consequence of filling the inner gorge of the monument would be the eventual filling-in of the area under the bridge by rock and sand. Dr. Woodbury noted that while this process of sedimentation was ongoing there would be significant visual degradation of the monument, but, ". . . these would be covered as the inner gorge filled. When that happy time arrived there would be nothing about the appearance of the little brook meandering through the streamside vegetation to remind the visitor of the former presence of the reservoir in the monument."[13] He then contrasts this idyllic vision with the consequences of construction at site B: ". . . to build the protective works would entail permanently marring the remarkable landscape, not only with dams and tunnels but also with the construction and equipment accessory to the main work . . ."[14]

Dr. Woodbury's article prompted a number of rejoinders, the most prominent by geologist William R. Halliday of the Western Speleological Survey in Seattle, Washington. Dr. Halliday rejects Woodbury's basic tenet that the reservoir would have no long-term effect on the monument by writing, ". . . there is considerable evidence that flooding and aggravation of sediments, sand, and silt in or near Rainbow Bridge National Monument would be highly detrimental to that monument and the adjoining area and that the proximity of the reservoir would seriously threaten the stability of Rainbow Bridge itself."[15]

The battle over the best way to protect Rainbow Bridge and its environs had clearly been joined, and men with impeccable academic credentials were lining up on both sides of the issue and drawing vastly different conclusions. It seemed at the time, however, that the debate was merely academic. The law on the subject was quite clear, stating that the waters of Lake Powell would not intrude into the monument and assigning responsibility for its protection to the secretary of the interior.

However, not everyone involved in the debate had the same measure of respect for the legal language. The ink was barely dry on the agreed provisions in the CRSP guaranteeing the inviolability of Rainbow Bridge National Monument before the very legislative leaders and Reclamation officials who had solemnly given their word to Howard Zahniser and David Brower now began trying to subvert the agreement. On a swing west in 1959, members of the House Interior and Insular Affairs Committee were interviewed in Flagstaff, Arizona, about the Glen Canyon project and its effects on Rainbow Bridge. Committee chairman Wayne Aspinal of Colorado explained, "One reason for the committee's current tour was to determine whether or not the saving of Rainbow Bridge was in the best interest of the nation as a whole."[16] Floyd Dominy boldly stated that in his opinion diversion dams near the bridge "would not enhance the view" and that any steps to prevent waters from Glen Canyon Dam from reaching Rainbow would probably be better left untaken. Said Dominy, who was accompanying the committee in its visits to various western water projects, "In my opinion water up under the Bridge would make it a more beautiful sight."[17] Hence, while supposedly studying in great detail the best way to protect the monument from impairment under the law, the commissioner of reclamation was openly telling everyone who would listen that he considered the whole process a waste of time.

However, the Eisenhower administration and its interior secretary, Fred Seaton, understood their obligations, and, therefore, in the budget submitted to Congress in 1960, requested $3.5 million of the projected $25 million final price tag for the structures necessary to protect Rainbow Bridge. However, on March 11, 1960, just as President Eisenhower's last budget reached Capitol Hill, Senator Frank E. Moss introduced a bill (S.3180) to strip the provisions protecting Rainbow Bridge from the Colorado River Storage Project Act. In remarks made to the Senate accompanying his bill, Utah's junior senator stated,

> I contend that the $25 million requested for this purpose by the President in the 1961 fiscal budget

> would be an unnecessary expenditure and represents a nonsensical and indefensible waste of the taxpayer's money... I submit, Mr. President, that allowing the waters of the Glen Canyon Reservoir to back up under Rainbow Bridge in southern Utah will not "impair" this national monument, but will substantially enhance it, and that the so-called protective works which the department is being forced, by provisions of the law, to plan and build are nothing short of a first-rate boondoggle.[18]

It apparently did not occur to Senator Moss, Congressman Aspinal, or Commissioner Dominy that saving Rainbow Bridge was a key element in an honorable bargain struck between conservationists and legislators barely four years previous, a bargain by which the fledgling environmental community had allowed the CRSP to pass unmolested into law. But, no matter—Senator Moss's bill was going nowhere.*

However, for construction on the protective works to actually begin, Congress needed to appropriate the money. The Constitution requires that all appropriations bills originate in the House of Representatives, so the House Appropriations Committee was to consider the measure first. Heavy behind-the-scenes lobbying by Senator Moss, Wayne Aspinal, and Floyd Dominy (perhaps the only time in history that a federal agency actually lobbied against a budget item recommended for that agency by the president) preceded the vote. In May, 1960, the committee deleted that line from the budget, stating flatly that it saw "no purpose in undertaking an additional $20 million in order to complete the complicated structures."[19]

The members of the Appropriations Committee must have known what a furor their action would arouse within the conservation community, and one might be permitted to wonder why they didn't simply accede to the president's request, appropriate the money, and build the structures. After all, compared with the cost of Glen Canyon Dam (over $300 million), the money requested to protect Rainbow Bridge was mere congressional pocket change. The attitude of the Bureau of Reclamation was also puzzling. An agency which seemed willing to drop a dam and reservoir into virtually any canyon in the West was now loudly proclaiming that it did not want to build one in Bridge Creek. With the benefit of hindsight it now seems clear that the motive of both Congress and the bureau was simple one-upmanship. Western states congressmen had been stung and stung badly by Dave Brower's success in stopping Echo Park Dam. The bureau, too, felt that it had been publicly humiliated on its own turf, and now both bodies saw a way to strike back. It was one thing to prevent Interior from building a dam—it was quite another to force Congress to approve one. If the conservationists wanted to preserve Rainbow Bridge National Monument, they would have to do it without congressional cooperation.

There were two possible ways that the secretary of the interior could have done an end run around such legislative intransigence. One would have been to use discretionary funds within the department to funnel money into Rainbow Bridge or to temporarily "borrow" funds from other projects to be made up in supplemental appropriations later on. Another tactic might have been to use monies appropriated for Glen Canyon Dam on the pretext that the CRSP made protecting Rainbow Bridge part of the Glen Canyon project. The Appropriations Committee made such a face-saving move impossible, however, by inserting special language into the appropriations bill for Interior. It said, "... no part of the fund herein appropriated shall be available for construction or operation of facilities to prevent waters of Lake Powell from entering any national monument."[20] All avenues of escape had been cut off. Congress had declared that it was reneging on the pledge it had made in the CRSP and was now virtually challenging the environmentalists to do something about it.

Not all western congressmen felt that the direction the Appropriations Committee had taken was an honorable way to proceed. One such was a young representative from Arizona's Second District, Stewart L. Udall. Born in 1920 to a farming and ranching family in St. Johns, Arizona, Stewart had earned a law degree (with distinction) from the University of Arizona in 1949 and after practicing law for a time made a successful run for Congress in 1954. Now serving his third term, he had supported the Colorado River Storage Project Act back in 1955 and was an enthusiastic proponent of water resource development in his home state. However, this approach of passing a law and then ignoring it purely out of spite seemed to him not only disingenuous but also dishonest. Before saying anything, however,

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* Senator Moss was nothing, however, if not persistent. He introduced almost identical bills in 1963 and 1973, none of which even got so much as a hearing.

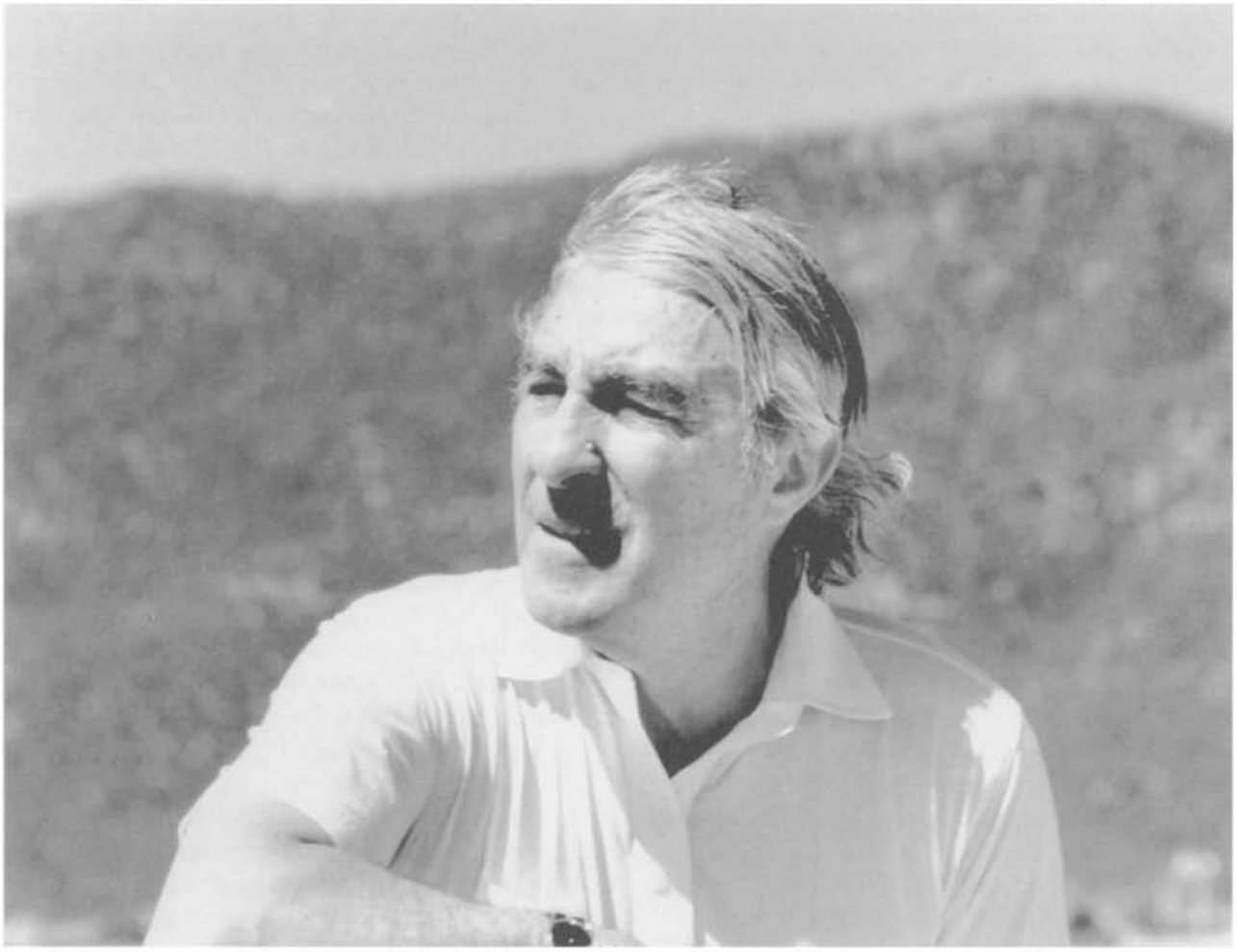

Figure 55: Stewart L. Udall. Former Arizona congressman and Interior Secretary under Presidents Kennedy and Johnson, he was caught in the crossfire in the battle between Congress and the environmental movement over Rainbow Bridge.

he decided to go and see what all the fuss was about. Accordingly, in early August 1960, he, his sons Tommy and Scott, and Representative John Saylor of Pennsylvania climbed aboard a raft at Hite, Utah, and began a float trip through Glen Canyon.

On the morning of August 9 the party hiked up Bridge Creek to Rainbow Bridge and what Udall experienced there confirmed his worst fears. Both he and Saylor believed the bureau's site B dam would be a disaster. He surmised that while the proposed dam would protect the box-shaped monument from being flooded it would despoil the surrounding country and thus degrade the bridge's setting. Representative Saylor agreed with Udall's analysis but suggested that an upstream dam would still be necessary to keep flood debris from settling beneath the bridge, the inevitable result of allowing the reservoir in. There was still the matter of the law, however, which simply demanded that Lake Powell be kept out. There clearly were no easy answers, and the congressmen debated, ruminated, and meditated on the problem for the remainder of the trip. By the time they had returned to civilization, Udall thought he had discovered a way to preserve the setting at Rainbow Bridge while at the same time soothing his troubled conscience.

In a letter to Congressman Aspinal dated August 27, he made two basic proposals. First, he challenged the Congress to settle once and for all the issue of the protective structures for Rainbow Bridge, not by the deceitful practice of refusing an appropriation but by passing a resolution spelling out exactly

why the barrier dams should not be constructed. Only in this way could Congress retain some shred of integrity on the issue. His second proposal was much more far-reaching and visionary. He wrote,

> I favor a broad extension of boundaries so that Rainbow Bridge National Monument will include its natural backdrop—the sandstone canyon area between the high water mark of Lake Powell and Navajo Mountain. Such action would safeguard this remarkable natural wonder and ensure its preservation for all time as a primitive park area.[21]

Congressman Udall must have known that his proposal faced tough sledding on two fronts. First, there was no way that either the Appropriations or Interior Committees was going to let a Rainbow Bridge appropriation bill or resolution reach the House floor. This was not a battle that reclamation-minded representatives ever wanted to revisit. Second, the land Udall was proposing for his new park was all Navajo Reservation. The tribe had consistently resisted trading for even the miniscule hundred or so acres in the Park Service expansion proposal, so there was little chance anyone was going to persuade them to trade the thousands of acres envisioned in this new scheme. It was an idea that Udall's brain simply would not let die, however, and it would reappear the next year under a far different set of circumstances.

The election that fall proved to be pivotal in the young congressman's career. It swept into office, by the barest of margins, a new Democratic administration headed by the junior senator from Massachusetts, John F. Kennedy, who now had the responsibility of choosing a cabinet from among the party leadership and his own supporters. Stewart Udall had been out front early in supporting Kennedy and had been instrumental in delivering all seventeen of Arizona's convention delegates to the young senator. Still, it came as a major surprise when Kennedy picked him to head the Department of the Interior. Wayne Aspinal of Colorado, the venerable chair of the House Interior Committee, figured that he should have been the logical choice for that position, and he wondered aloud whether his young protégé had the necessary administrative experience to run this large and contentious department. However, he was gracious in being passed over and offered the new appointee hearty congratulations and a promise of cooperation. Even conservationists, David Brower in particular, considered it a good choice.

Being titular head of the National Park Service and the Bureau of Reclamation simultaneously was certainly prestigious, but it put the new secretary squarely in the line of fire over the whole Glen Canyon-Rainbow Bridge controversy. The National Parks and Conservation Association greeted him in his first month in office by editorializing, "The protection of Rainbow Bridge National Monument is now squarely up to the Secretary of the Interior . . . The power to act . . . to save both Rainbow Bridge and the established national policy of protection is in the Secretary's hands. We urge him to exercise the power forthrightly and courageously."[22]

Secretary Udall was determined to do both. In March the Interior Department submitted its budget for fiscal 1961–1962 (actually prepared by the outgoing Eisenhower administration) to Congress containing the same request for funds to protect Rainbow Bridge which the previous Congress had refused, but he didn't just sit around and wait for this budget item to suffer the same fate as its predecessor. He sincerely believed that the idea he and Representative Saylor had hatched during that river trip the previous year represented a better approach to preserving Rainbow Bridge, and he was determined to use the full power of his new office to move the proposal along. He thought the best way to launch his idea was to stage a full-blown media spectacle at the bridge itself, an event involving congressmen, government officials, tribal elders, conservationists, and journalists. Accordingly, in the spring of 1961 he assembled a group of about sixty at Page, Arizona, and prepared to transport them all by air up the Colorado River to Rainbow Bridge.

The first part of the trip would carry his party to the spectacular summit of Cummings Mesa via large helicopters borrowed from the U.S. Air Force. Here attendees could drink in the magnificence of the secretary's proposed park while awaiting a fleet of smaller choppers to carry them into Bridge Canyon and to deposit them within sight of the Great Rock-Arch itself. Udall managed the whole affair with consummate logistic skill, and by noon on April 29 everyone who was anyone was assembled at the bridge. Even the weather was cooperating. John O'Reilly, one of the reporters invited along, set the scene:

> Here, indeed, was a uniquely beautiful and compelling place. The red canyon walls towered above, sometimes as straight as though hewn with a cleaver,

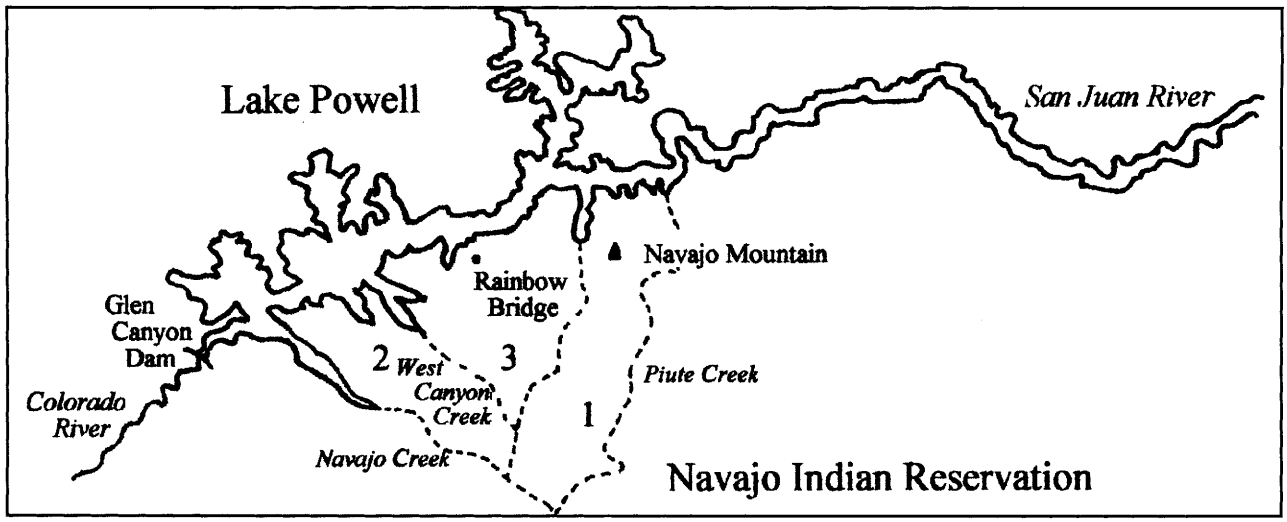

Figure 56: Map showing the approximate boundaries of the proposed Navajo Rainbow National Park. The full proposal encompassed all of the areas marked 1, 2, and 3. The first fallback position eliminated area 1; the final proposal left only area 3.

> sometimes curved band twisted. A small stream slid over smooth rocks into clear pools. Bright desert flowers bloomed along the stream, and lizards scurried about, lifting their heads to show palpitating throats as they scanned the strangers.[23]

By this time the secretary's somewhat vague and amorphous park proposal first broached the previous August had evolved into something very detailed and specific. The preserve he envisioned spanned 775 square miles south and east of Glen Canyon, from Navajo Canyon on the south to Piute Creek on the east. It would indeed have been a spectacular park, encompassing Navajo Mountain and the whole of the Rainbow Plateau. Sensing that the Navajo Tribe might be resistant to giving up such a large chunk of their reservation, Udall proposed two fallback positions. The first pulled the eastern boundary back so as to exclude Navajo Mountain, thereby reducing the proposal to 425 square miles; the second pulled the southern boundary north to West Canyon Creek, resulting in a park of only 219 square miles.[24] To compensate the tribe, Udall was prepared to offer comparable acreage, most with oil and gas potential, in western New Mexico.

Navajo Rainbow National Park, as Udall chose to name his proposal, would have supplanted and absorbed Rainbow Bridge National Monument. It solved the flooding problem rather neatly, if disingenuously, by establishing as its northern and western boundary the high-water line of Lake Powell, thereby guaranteeing that the reservoir would not intrude into the park even if it flooded the base of the bridge. Conservationists and reporters were escorted down-canyon to the site B location, where Floyd Dominy explained the protective works necessary to keep Lake Powell away from the bridge and where once again he reiterated that as far as the Bureau of Reclamation was concerned site C was a dead issue. Formal activities ended as Udall, the young interior secretary, and Brower, the accomplished alpinist, raced each other to the top of the bridge using the old Anasazi-Wetherill Trail and were then plucked off the bridge by an Air Force helicopter for the return flight to Page.

At first it seemed that the day was a success. The arrangements had all gone smoothly, journalists had responded with a flood of publicity, most of it favorable, and no one had actually panned his idea, at least not to his face. However, in the months following the bridge extravaganza it became obvious that his plan had fallen flat with the two constituencies, environmentalists and the Indians, whose backing he absolutely had to have if there were to be any chance of success. For David Brower, Sigurd Olson, Frank Masland, and the other conservationists who were present at the Bridge Creek rendezvous there was one dark and unmistakable fact which stared out from beneath the hype and the glory surrounding the interior secretary's proposed new park—at the end of

it all the proposal would allow Lake Powell to back under Rainbow Bridge and through the heart of the national monument, an occurrence which Brower and his allies bitterly opposed and which the law expressly forbade. The plain fact was that Secretary Udall's plan was a payoff—a bribe to get the conservationists to drop their insistence on barrier dams in exchange for a vast new wilderness park, a park whose boundaries were conveniently placed above Lake Powell's high-water line. To these men the proposal smacked a little of reducing the crime rate by eliminating various sections of the criminal code, and they weren't buying. Brower and his associates were perfectly willing to support Navajo Rainbow National Park, but not at the cost of sacrificing Rainbow Bridge. As the National Parks Association wrote, "... the enlargement of the Monument, unless integrated with effective plans to protect it as required by law against the reservoir which will form behind Glen Canyon Dam, might have the incidental though undesired effect of defeating protection."[25]

For Paul Jones, World War II veteran, ex-college professor, and now chairman of the Navajo Tribe, the secretary's proposal was interesting but flawed. The fact that the secretary had introduced the proposed trade to the public without first consulting with tribal authorities was irritating to say the least. Where their reservation was concerned, the Navajos were particularly sensitive, and while land trades and boundary adjustments were not out of the question, they felt that such matters were best settled in private outside the glare of publicity. Another irritant concerned the land that Udall was offering to exchange. Some sections, particularly in the Church Rock-Two Wells area, were already the subject of an entirely separate land exchange negotiation, so Jones was left with the impression that either Interior was incompetent or was trying to deal the same goods twice. In the end, the chairman wrote to Udall that he did not feel "justified in recommending cession of such a substantial portion of the Navajo Reservation for park purposes."[26]

In all practical respects, the secretary's park proposal was dead, at least insofar as it could serve as a solution to the Rainbow Bridge problem. Still another hard jolt back to reality was provided later that year when the Congress once again deleted the item for protective works from the Interior Department appropriation bill and added the same restrictive language as it had the previous year. Apparently, this time a subcommittee for Public Works had recommended approval of the appropriation but the full committee had rejected the recommendation by a two-vote margin. Since a tie vote would have approved the subcommittee's action, this meant that Rainbow Bridge had lost by a singe vote. This tragedy was magnified by the fact that had the protective works appropriation reached the House floor it would have been supported by an overwhelming bipartisan coalition.

The anger within the conservation community was almost palpable. Writing in the *Sierra Club Bulletin*, David Brower stated,

> We now know that the life expectancy of one of America's greatest scenic resources, including the pristine approach to Rainbow Bridge, is reduced to fourteen months. The exact time is not important here. What needs to be chronicled as a flagrant betrayal, unequaled in the conservation history that sixty-eight years of *Sierra Club Bulletins* have recorded.[27]

The National Parks Association reported, "In the closing hours of the fight for Rainbow it began to seem clear that the deals had been made and Rainbow was not in the bargain. That the margin was so close speaks well for the fight conservationists made. Bitter as this reversal may seem, and late as the hour is, the fight to protect Rainbow is not yet over."[28] The prophecy uttered in this paragraph was truer than even the editors of *National Parks Magazine* could have known. The battle for Rainbow Bridge was indeed not over—in many ways it was just beginning.

Meanwhile, a few dozen miles downstream at the Glen Canyon Dam site events were rapidly reaching a critical phase. When work began at the site back in 1956 the first order of business had been the drilling of two diversion tunnels, one on each side of the river, to carry the Colorado around the construction zone and then back into the river channel well downstream. Work on them began in earnest during October when Mountain States Construction began blasting the entrance to what would be the 2,778-foot west tunnel near river level. For a while surveyors, construction engineers, and river runners coexisted in a somewhat cautious and uneasy relationship, but the day was fast approaching when the construction site would become too dangerous for unauthorized personnel to be allowed access. That day finally arrived in the brilliant early summer of

1957. On June 4, by prearrangement with the Bureau of Reclamation, Joan Nevills Stavely, eldest daughter of pioneer river runner Norm Nevills and owner of a little rafting outfit called Canyoneers, piloted the last boat allowed past the dam site and down the Colorado toward Lees Ferry.[29] From that date all river traffic was forced to exit the canyon twenty-two miles upriver at Kane Creek Landing, the little site Art Greene had constructed as a launch point for his upriver Rainbow Bridge tours.

Once the diversion tunnels were well underway, construction began on the cofferdam, an earth and rock structure that would force the river into the tunnels and dry out of the actual construction zone. Begun in November, 1958, the cofferdam finally blocked the river off on February 11, 1959, and crews could at last begin excavating the real dam site down to bedrock. The foundations of the dam were placed 72 feet below river level, and once that platform was in place the structure began to rise swiftly toward its eventual crest 710 feet above. Under the watchful eye of Lem Wylie of the Bureau of Reclamation, the workers of Merritt-Chapman & Scott worked in three shifts around the clock six days a week pouring concrete into "the Hole," and the solid white face of the dam quickly began to exhibit its graceful curved shape between the vertical sandstone walls. By the time Stewart Udall was making his presentation to the assembled dignitaries in Bridge Creek the dam was nearly five hundred feet above river level and rising fast. If all went according to plan the bureau was scheduled to close off the river and begin filling Lake Powell early in 1963.

Stewart Udall was now literally between the proverbial rock and hard place. His plan to create a new national park around Rainbow Bridge was a dead issue, Congress was intransigent over the issue of barrier dams to protect the tiny national monument, and Glen Canyon Dam was nearing completion. The law gave him the responsibility to protect Rainbow Bridge, but it seemed that all avenues and options were shut tight. The Interior Department's budget request had gone to Congress in March, 1962, and continued the standard request for monies to build protective structures, but Udall knew it would suffer the usual fate. There was but one option open and that was to order the gates at Glen Canyon to remain open pending the resolution of this quandary. Having been rebuffed by Congress at every turn, this was exactly the course of action the conservation community was now urging, in fact demanding, on the embattled secretary. David Brower, rising to new rhetorical heights, wrote,

> Preclude impairment, the law says. It doesn't say to plead excessive cost. Or to hustle through some "geological whitewash." Or to arrange a series of show-me trips to lead editors and Congressmen into believing that protection is just too much load on the taxpayers and would tear up the country with roads and scars . . . And when the law says "preclude impairment" it spells it out in unmistakable words: "no dam or reservoir . . . shall be within any national park or monument." Not maybe. Not yes, but. Just NO . . . We think you want to have a good place in conservation history—not for the personal glow it gives you but for the places in America that are kept beautiful for our sons and theirs . . . We think you can have that place in conservation history. But not by letting those Glen Canyon tunnels be closed until you have done your duty, and the protective works are absolutely assured . . . If Rainbow is not protected, it is not your subordinates who will be held responsible. It is you. You, Secretary Stewart L. Udall . . . Don't let yourself down. Nor us.[30]

These were hard words—and the truth. Udall replied that Interior was well aware of its responsibility under the law and that the request for funds to build protective works would be vigorously prosecuted. However, he also realized that the solution Brower was urging was virtually unthinkable. Even if he could withstand the rage such a course of action would provoke from his own Bureau of Reclamation, the political flak from the Upper Basin states and from Congress would be unimaginable. Hence, Secretary Udall did nothing and the conservationists went to court.

In August, 1962, the National Parks Association, the Sierra Club, and a number of other conservation organizations filed suit in the U.S. District Court in Washington, D.C., for an injunction preventing the secretary of the interior from closing the gates at Glen Canyon until protective works for Rainbow Bridge were assured. The decision came down on December 27, and the news was not good. Judge Alexander Holtzoff dismissed the suit, ruling that the organizations which brought the action had no standing in law on this issue. The concept of "standing" is a basic legal principal firmly rooted in the Anglo-American judicial system, and it basically says that in a civil dispute only those parties which are

threatened with actual harm by any action have the right to sue over that action. Down through the years the standard of harm that was most often applied related to some monetary loss which resulted, or might result, from a particular circumstance.* Not only could the Sierra Club not demonstrate any harm to its organization which might result from the flooding of Rainbow Bridge National Monument, but it could not even show any regular organized visitation by its membership to the bridge. (In fact, before Secretary Udall flew them there, most of the leadership of America's major conservation organizations had not even seen Rainbow Bridge.)

However, while the court decision was a disaster for efforts of the environmental movement to save the national monument, it also deepened the quandary of Secretary Udall. In a misguided effort to make the secretary's burden a bit lighter, bureau lawyers tried to pressure the judge to rule on the merits of the case, perhaps with the certainty that his opinion would be in their favor. While in no position to give an official ruling on a case he had just dismissed, the judge was perfectly willing to share his opinion with the Bureau of Reclamation, and that opinion was totally diametric to what the Interior Department wished to hear. Bureau attorneys argued that Congress's refusal to grant an appropriation had effectively negated the provisions of the CRSP relative to protecting Rainbow Bridge, and, therefore, the secretary of the interior was no longer bound by these provisions. Judge Holtzoff shot back that the relief sought by the plaintiffs, namely leaving open the gates at Glen Canyon Dam, required no money whatsoever, and then he went one step further by declaring, "I am not going to construe the act of Congress as being modified by these limits on appropriations. It has been held time and time again that limits on appropriations do not modify permanent statutes . . . The provisions of the Colorado River Storage Project Act remain in force . . ."[31]

The effort by his department's lawyers had backfired and Udall's problems were more serious than ever. He now had an opinion by none other than a respected judge of a Federal District Court spelling out his responsibility to obey the letter of the law, but exactly how he was to do it remained problematic. Unable to reach a satisfactory and honorable conclusion on his own, he turned for advice to the solicitor general, Frank J. Barry, the chief legal counsel for the Department of the Interior. On January 18, 1963, he received the following reply:

> As you have requested I have thoroughly reviewed the Appropriation Act provisions which for the last three years have prohibited the availability of funds for construction or operation of facilities to prevent waters of Lake Powell from entering Rainbow Bridge National Monument. As a result of this review I have no hesitancy in advising you that the provisions originally included in the Colorado River Storage Project Act calling for protective measures at Rainbow Bridge National Monument have been suspended by the Congress and are no longer operative. Under the present state of the law applicable to Glen Canyon, it is the intention of the Congress that construction and filling of the reservoir should proceed on schedule without awaiting the construction of barrier dams at Rainbow Bridge. In these circumstances your refusal to initiate controlled storage behind Glen Canyon Dam would be at complete variance with the law applicable to the project. Consequently, such a course is not within the realm of responsible choice open to the Secretary of the Interior."[32]

The solicitor's opinion was explicit and to the point—leaving the gates at Glen Canyon open would be a violation of the law; closing them would not. Consistent with the opinion of his highest legal counsel, the secretary passed the word quietly to Commissioner Dominy at Reclamation that the gates at Glen Canyon Dam were to be closed on schedule.

The conservation community could scarcely believe what was happening. The beautifully explicit language inserted with so much care into the statute authorizing the CRSP was being deliberately ignored, first by Congress and now by the secretary of the interior. Their only opportunity for relief lay in the chance that a personal appeal directly to the secretary might dissuade him from a step which at that point seemed inevitable. Accordingly on the morning of January 21, 1963, David Brower walked into Stewart Udall's office hoping against hope for a few moments of the secretary's time for a final attempt to avert catastrophe. Brower never got his meeting with Udall. That day the secretary was not thinking

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* This, of course, was years before the Supreme Court, in *Sierra Club v. Morton* (1972) (405 US 727), considerably expanded the concept of standing as it related to public interest groups, such as the Sierra Club. It was also long before the panoply of new environmental laws gave wider access to the courts for both individuals and organizations.

much about Rainbow Bridge but instead had moved on to bigger and better projects guaranteed to infuriate environmentalists. That afternoon Dave placed himself at the back of the Interior Department auditorium and stood with open-mouthed amazement as Stewart Udall, Floyd Dominy at his side, announced plans for a series of hydroelectric dams in the Grand Canyon. It was obvious to Dave that these people had learned nothing from the battle for Echo Park, and that this new proposal would once again pit old antagonists in a bitter political struggle.

That, however, was far in the future. The reality of the present was that as Brower sat in Udall's office waiting for an opportunity that never came, workers at Glen Canyon were descending into the Hole and approaching the west tunnel. It was this outlet that had for the past six years directed the wild Colorado around the construction zone and on down toward Lees Ferry. However, the dam now stood six hundred feet above the canyon floor and the time had come to begin shutting the river off. The first order of business was to chip away at the layers of ice that now coated the steel gates wherever metal met water. Then a team of ironworkers began the slow, meticulous process of screwing the three slide gates down until at last the tunnel was blocked and the river, for the first time in millennia, no longer flowed free. The entire process required two full days, and when the tunnel had drained a temporary plug was installed, to be supplemented later by four hundred feet of solid concrete.[33]

As the river found the path to the sea closed, its rage was furious and dramatic. Great swift eddies formed where the current once ran, and the blockaded stream tore at the huge earthen cofferdam in a vain effort to find a new channel down-canyon. It was not long, however, before this fury was replaced by quiet acceptance, and a large still pool formed where the untamed river once flowed. This new lake did not have long to rise, however. The east diversion tunnel had been drilled thirty-three feet higher than the west, and when the reservoir found the open portal it rushed through with renewed vigor, a wild river once more.

The Colorado's death sentence had not been commuted, however, only postponed. In the meantime this shallow lake lying in the shadow of the large dam was sufficiently deep to push slackwater into Wahweap, Antelope, Navajo, and Warm Creek Canyons. From the mouth of Cataract Canyon to the dam site, Glen Canyon had a uniform and very gentle gradient of about two feet per mile, so this temporarily small pond was sufficient to annul the river's current for fifteen miles upstream. The coup de grace for the Colorado River and for Glen Canyon was administered on March 13. On that day, two of the east diversion tunnel's three gates were shut tight; the third was lowered until exactly one thousand cubic feet per second were flowing through the tiny opening, just enough to maintain an adequate reservoir in Lake Mead to insure efficient electric power generation.[34] It would remain in this position until the reservoir level reached the giant tubes feeding down to the hydroelectric generators waiting below. From then on, under normal circumstances, the only water leaving Lake Powell would first turn these giant turbines before being allowed to flow on toward the Grand Canyon. The river was now totally subject to the rule of man, flowing only according to the demand for electric power in places like Phoenix, Arizona, and Bountiful, Utah. The heart of a great wilderness had been stilled.

Despite the fact that 1963 runoff into the Colorado River Basin was distinctly below average, the reservoir behind Glen Canyon Dam began to rise swiftly inside the narrow inner gorge, and every foot of new water in the pool stilled another half-mile of current in the ancient river. By April 1 the lake had reached a surface elevation of 3,234 feet and was now just below the mouth of Forbidding Canyon. The "pretty little rapid," first run by John Wesley Powell in 1869, went under first; next to be swallowed was the large sandbar, which had sheltered Anasazi farmers, American gold prospectors, and, later, countless river runners and hikers. Finally, the grey-green pool began to invade the canyon of Aztec Creek itself, moving inch by inch up the little stream, drowning the wildflowers, cottonwoods, and willows and lapping ominously against the canyon walls themselves. Site C, the conservationists' preferred location for the protective barrier dam, was flooded on June 8.* A year later, on June 23, 1964, the reservoir reached the junction of Bridge and Aztec Creeks, drowning the Narrows site and inching up Bridge Canyon toward the monument, now barely a mile away. At this point,

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* The dates given here were interpolated from the bureau's monthly fill statistics for Lake Powell and should be regarded only as approximate.

however, the advance of the lake slowed dramatically. Back downstream the water had already filled the vertical-walled inner gorge of Glen Canyon and was now beginning to spread into the wider, broader benchlands. From now on it would take much more water to raise the surface elevation of Lake Powell than had been the case heretofore. Also, in contrast to Glen Canyon's gentle, barely discernible gradient, Bridge Creek fell about 140 feet per mile from Rainbow Bridge down to Aztec Creek, so the lake would now face a steep uphill climb. Finally, at the dam itself the water was 388 feet deep and the first of Glen Canyon's giant turbines was about to go on-line. Once this happened the water releases from the dam would increase far above the minimal level that had prevailed during the previous year. These factors would protect Rainbow Bridge from the reservoir for several more years and would give the conservationists time for one more try at saving it.

A year earlier the federal government had thrown in the towel with regard to the construction of protective works for the monument. In his address to Congress accompanying the budget for 1963–1964, President Kennedy had written,

> Funds are not included in the 1963 budget for the construction of protective works at Rainbow Bridge, Glen Canyon Unit. Requests for appropriations for such works were included in the budget for 1961 and 1962 but denied by Congress. It was indicated last year that construction must be initiated in 1962 unless plans to fill the reservoir were to be modified. The decision on the provision of facilities to protect Rainbow Bridge, therefore, rests with the Congress.

Congress responded by inserting the same restrictive language into the budget for the Interior Department that had first appeared back in 1960. In fact, while Interior never again asked for funds to build the protective works, Congress continued to place language prohibiting such construction in every appropriations measure up through 1971. Conservationists, too, no longer thundered over the issue. They bided their time, waiting for just the right moment to play their last card.

It wasn't as if the environmental community had nothing to do in the meantime. The plans announced back in January, 1963, for dams at the Bridge and Marble Canyon sites within the Grand Canyon reached Congress in the summer of 1965, and the public was treated to a virtual replay of the Echo Park controversy from the decade before. In some cases even the faces were the same. There was David Brower confronting Floyd Dominy and leading the Sierra Club into battle once more, conjuring up friends in the scientific community to challenge the bureau's own calculations, publishing a book filled with magnificent photographs (this one entitled *Time and the River Flowing*), and soliciting from a concerned public a torrent of mail directed at wavering congressmen. Incredibly, the tactics which had saved Dinosaur worked yet again, and by early in 1967, Stewart Udall was passing the word that Interior was withdrawing from the fight. The Sierra Club had taken on the Bureau of Reclamation a second time and had scored an impressive victory.

In many ways this triumph, like Echo Park before it, was David Brower's own. It was he who planned the tactics, organized the battle, and directed his troops, and only he had the unique ability to persuade and attract others by the sheer force of his own commitment. In addition, he had been able to grow the club from a California hiking association with barely four thousand members to a national conservation organization now seventy-seven thousand strong and equipped with enormous political clout. Yet, the battle to save Grand Canyon was to be his undoing. To win he had found it necessary to go over the heads of the elected club leadership and, in some cases, to spend money the club did not have. These actions precipitated an internal battle that David Brower could not win, and in April, 1969, the board of directors fired him, averring that by his tactics he had "seriously damaged the Club's reputation as well as its future effectiveness."[35] Dave was not one to sit back and retire on his laurels, however. Within a few months he had founded a new conservation organization, called Friends of the Earth (FOE), with himself as executive director and president. Using this new platform he was able to position himself to take up once more the fight over Rainbow Bridge.

With Congress intransigent and the administration playing like Pontius Pilate, the only strategy possible was to go back to court. Of course, conservationists had been there before and had been turned away for lack of standing. Hence, this time the strategy would have to be different. FOE was willing to be the lead organization in the planned lawsuit, would hire the attorneys, and would pay the cost of litigation, but plaintiffs would have to be found whom the court could not easily dismiss. While there was no

shortage of volunteers, Brower selected two that seemed to meet all the criteria. First in line was the Wasatch Mountain Club, a hiking and wilderness advocacy organization based in Salt Lake City which could show regular, consistent use of Rainbow Bridge. Second was the venerable Ken Sleight, the veteran river rat and outfitter, who could show a personal financial loss should Lake Powell cut off his access to the trail leading to the top of the bridge. It was not a perfect lineup, but it was probably enough to get the suit into court. Now all that remained was to select the venue and the timing.

At the end of December 1965 Lake Powell had reached a surface elevation of 3,534.4 feet, and had thereby covered the bureau's preferred barrier dam location at site B to a depth of about two feet. Early in 1970 the reservoir reached 3,570 feet, covering site A as well and placing the lip of the pool just one-third of a mile from the monument's northern boundary. By November 1, Lake Powell reached 3,600 feet, just six feet in elevation below and a quarter-mile downstream from that critical line which the law said could not be crossed. Brower figured that now was the time to act. In November, 1970, Friends of the Earth, the Wasatch Mountain Club, and Ken Sleight filed suit in the Federal District Court for the District of Columbia asking that the Bureau of Reclamation and the secretary of the interior be permanently enjoined from allowing Lake Powell to rise above elevation 3,606.1 feet. The coalition's complaint, filed by James W. Moorman (who was at the same time lead attorney for the Sierra Club Legal Defense Fund) and Victor H. Kramer, read, in part,

> Defendants have violated, are now violating, and, unless the relief hereinafter is granted, will continue to violate the Colorado River Storage Project Act in that they have failed to take adequate protective measures to preclude impairment of Rainbow Bridge National Monument in violation of Section 3 of said Act. Unless the relief hereinafter requested is granted, defendants will also be in violation of Section 3 of said Act in the very near future by allowing Glen Canyon Reservoir to be within Rainbow Bridge National Monument.[36]

Brower's strategy was brilliant. It required no congressional appropriation to implement so there was no separation-of-powers problem, and it would not require the secretary of the interior to empty Lake Powell, only limit its height. By waiting until all barrier dam sites had been inundated, Dave made sure that there were no practical alternatives; the decision would have to be up or down, yes or no. It was a possible solution that also offered certain advantages. Not only would a successful conclusion to the suit protect Rainbow Bridge, it would leave a substantial portion of the country surrounding Glen Canyon, including large sections of many important side canyons, above water. The plaintiffs approached the court with confidence; they were certain the law was on their side. The issue was simply whether Congress could pass a law and then ignore it. To Dave Brower and his allies, if respect for the law meant anything, the inaction by Congress and the Executive Branch could not, would not be allowed to stand.

At least in the early scenes of this judicial drama, things did not go well for the conservationists. The court was asked to enjoin the Bureau of Reclamation from allowing the lake to enter the monument pending the outcome of the suit, and this the court refused to do. Lake Powell would continue filling on schedule while the litigation was in process. They also lost on the matter of venue. Brower had chosen to file this suit in Washington, D.C., rather than in Salt Lake City because the former was known to be at least somewhat friendly to environmental causes and because he figured he could get better environmental lawyers in D.C. than might be available in Utah. (FOE could not afford to hire a legal team and then pay travel and per diem expenses to jet them all over the country.) The government, on the other hand, was anxious to have the suit heard in Salt Lake City, where the sitting judge would likely be more understanding concerning the need to fill a reservoir whose dam was already in place and where the local media and politicians would be sure to put a positive spin on their efforts. (Of course, the government's legal team would live and travel at public expense.) Accordingly, the Justice Department moved for a change of venue to Salt Lake City, and their motion was granted by District Judge William B. Jones on May 19, 1971. The Justice Department had stressed that the move was necessary because western water rights were involved and because witnesses would be more likely to be available in Salt Lake City than in the District of Columbia. Judge Jones agreed and also noted the heavy case load in his court compared to the one out west.[37]

This action threw the whole Rainbow Bridge controversy squarely into the lap of Federal Judge

William Willis Ritter. Had the government lawyers been more industrious in doing their homework they might have been somewhat less anxious to get their case into his court. Judge Ritter had been born on January 24, 1899, in Salt Lake City and had law degrees from both the University of Chicago and Harvard. He had been on the federal bench since 1949 (a Truman appointee),[38] was a Mormon, and owned a farm called Thousand Springs near Wendell, Idaho, so on paper he looked to be a learned man and the Justice Department's ideal anti-environmentalist judge. The reality was somewhat different. Judge Ritter was widely known as a true maverick who loved tweaking the government's nose at every opportunity. He had adjudicated environmental matters in his court before, most notably with regard to the proposed Escalante Wilderness, and Utah environmentalists were generally pleased with both their treatment and his decisions. Hence, although he didn't know it at the time, David Brower's cause had not been harmed by the move to Utah.

In the meantime, Lake Powell continued filling. During the winter of 1970–1971 the water level held close to 3,600 feet, but as the spring runoff began arriving from the high country upstream, the lake again began its inexorable rise toward Rainbow Bridge. On May 21, the National Park Service superintendent at Glen Canyon sent the following memorandum, stark in its brevity but chilling in its implication, to his supervisor in Albuquerque:

> Memorandum
> To: Director, Southwest
> From: Superintendent, Glen Canyon
>
> This is to inform you that as of midnight, May 19, 1971, the elevation of Lake Powell reached 3,606.32 feet above sea level. The impoundment has entered into the Monument. This memorandum is for your information.
>
> C. E. Johnson [39]

The tragedy that conservationists had worked so hard at all levels to prevent had, at long last, become a reality. By the time the court heard arguments in the case during January and February, 1972, the water stood eight feet deep at the northern boundary and was well inside the monument.

The Park Service had nothing to say on the whole issue. In a September memorandum to Albuquerque, C. E. Johnson, the man nominally in charge of protecting the national monument, wrote,"I recommend that the Service should not issue any official position statement either pro or con. The best we could hope for, in my opinion, would be "knots" on our heads from one group and accolades from the other and, in the words of my old grandfather, "sometimes it is better to be yellow than black and blue."[40]

Oral arguments on the suit commenced in the United States District Court for the District of Utah on January 13, 1972. The plaintiffs, now represented by James B. Lee and Owen Olpin of Salt Lake City, argued the obvious, namely that the law specifically prohibited Lake Powell from entering Rainbow Bridge National Monument and that Congress, despite several opportunities, had refused to strike or amend the operative statute. Attorney Lee also pointed out that the law did not specify barrier dams as a way of carrying out the statute—there were other ways to accomplish the same goal. Hence, the simple act of refusing an appropriation could not be construed as repealing the congressional intent over Rainbow Bridge.

The government, represented by lead attorney Thomas L. McKevitt of Washington, D.C., argued that by refusing an appropriation for barrier dams and at the same time restricting the secretary of the interior from using any appropriated funds for Rainbow Bridge protection, Congress had indeed expressed an intent to repeal the protective statute it granted in 1956. In addition, Attorney McKevitt argued that subsequent statutes, namely 43 USC 1552(a) and 43 USC 620(f), passed in 1968 and 1962 respectively, set operating criteria for Glen Canyon Dam which could not possibly be met were the reservoir to be held at elevation 3,606.1 feet., as plaintiffs were demanding. Hence, the government was arguing that Congress had, in fact, accomplished a de facto, if not a de jure, repeal of the protective language contained in 43 USC 620.

This was clearly a thorny legal issue, one in which points of law could be raised to support either side. However, in the Salt Lake City media the debate was already hot and getting more heated by the day. Dr. Delbert Wiens, president of the Wasatch Mountain Club, stated, "We feel this generation owes it to the next generation to consider the quality of life as we develop resources. We see development taking place purely for development's sake—they're dam builders and it is natural for them to want a bigger dam with more water."[41]

On the other hand, Felix Sparks, director of the Colorado Water Conservation Board, was just as emphatic on the other side: "If the suit is successful,

then all future water development in the Upper Basin of the Colorado River, including those projects now authorized, will be destroyed, both in terms of water supply and economic feasibility. The suit, therefore, poses the greatest challenge in history to water resource development in the Upper Basin states."[42]

This time, however, the battle was not being fought in the court of public opinion but in a court of law. After a long twelve-month, nail-biting wait, Judge Ritter finally handed down his opinion. In a three-page Order Judgment and Decree issued on February 27, 1973, the judge granted the plaintiff's motion for a summary judgment and ordered the Bureau of Reclamation ". . . forthwith to remove all waters which have already intruded from Lake Powell and the Glen Canyon Unit from the Rainbow Bridge National Monument and to prevent the waters from Lake Powell and the Glen Canyon Unit from entering the boundaries of the Rainbow Bridge National Monument at all times in the future; . . ."[43]

Conservationists were ecstatic! At long last the legislative language they had labored so diligently to enact was going to be enforced. Congress could not, in fact, write a statute and then fail to face the consequences. Just to soften the blow a little to the basin states, Dave Brower pointed out that a partially filled Lake Powell would evaporate half the water a full reservoir would have lost and, therefore, would actually save about 2 million acre-feet per year. At a value of ten dollars per acre-foot, he calculated that over the lifetime of the reservoir the Upper Basin would stand to gain $1.3 billion, far offsetting any revenue lost from power generation shortfalls.[44]

The Bureau of Reclamation, however, saw the decision as a first-class disaster. When the decision came down Lake Powell stood at 3,600.7 feet, barely outside the monument, but runoff from heavy winter snows in the Rockies, the Wind Rivers, and the Uintas would soon come pouring down the Colorado, the Green, and the San Juan, and under the terms of Judge Ritter's order the bureau had no place to put it. The only immediate solution was to begin dumping water—and fast. Hence, the bureau began sending twenty-five thousand cubic feet per second through the dam's power plant, the maximum flow possible and nearly double the normal rate for the time of year. The resulting power output of the generators was far above demand, so the bureau was offering to sell the excess—cheap—to any consumers along the western power grid who could use it.

The bureau sold its surplus power, of course, but the District Court decision created a gigantic long-term problem for the government. The power plant at Glen Canyon was designed to run at maximum efficiency with the pool at 3,570 feet in elevation, so if the level of Lake Powell were held to 3,600 feet everything would be fine.[45] The problem was that the lake could not be held at a static elevation. The reservoir was designed to regulate the river so that precisely 7.5 million acre-feet per year would flow through the Grand Canyon and into Lake Mead. In wet years it was designed to rise, storing the extra water; in dry years it was designed to drop, sending storage downstream. Under Judge Ritter's decision the reservoir had only thirty feet of "head" below which, one by one, the great generators would have to be taken off-line. The bureau was counting on power sales to repay the cost of the dam and to finance the big irrigation projects upstream. Without it, Glen Canyon Dam and the whole Upper Colorado River Storage Project would become one gigantic white elephant.

For the Upper Basin states the decision was an even greater loss. The cross-section of Lake Powell looks like a huge funnel, with the greater part of the storage in the upper levels. In fact, the top hundred feet of the reservoir holds nearly 46 percent of the total storage capacity. Hence, in one fell swoop conservationists had reduced the potential holdings of Lake Powell from 27 million acre-feet to 14.75 million acre-feet, water these states were counting on to fuel their future economic growth.[46] Both the Bureau of Reclamation and the states of the Upper Basin were now desperate to find some way of nullifying Judge Ritter's decision.

There were two options open to the government. The most direct approach was to go to court and follow the lengthy appeals process, hoping that somewhere along the way Judge Ritter would be overturned. The first step in the process was to go back into the U.S. District Court and ask Ritter to overturn his own order or to at least issue a stay pending an appeal to the Tenth Circuit in Denver. Accordingly, U.S. Attorney C. Nelson Day, acting for Secretary Rogers C. B. Morton and the Bureau of Reclamation, filed the necessary papers on March 13, 1973, and got a hearing for Tuesday, March 28.

Both David Brower and David Crandall, head of the Bureau of Reclamation's Region 4 office in Salt Lake City, testified, Brower emphasizing the

potential harm to the monument if water were allowed in, Crandall complaining about potential lost power revenues. As expected, Judge Ritter took the motion under advisement, and then on April 22 handed down his decision. From the government's perspective the news was all bad. The judge refused to alter his decision or to stay his order, the consequence of which was the dumping, potentially, of 4 million acre-feet of water from Lake Powell. In the commentary accompanying the decision he stated,

> It clearly appears that the interests of the plaintiffs will be damaged if the order isn't enforced. Congress has long since settled that the interests of the public herein lies in protecting the Monument at all times . . . The question, then isn't so much whether defendants and intervenors have carried their point by a preponderance of the evidence but whether they have presented the court with any evidence on their point at all.[47]

With no relief or prospect thereof coming from the U.S. District Court in Utah, the government would now have to take its case to the Tenth Judicial Circuit.

A second option was to attack the legislative foundation of the plaintiffs' case, namely the provision protecting the bridge from Lake Powell. On March 12, 1973, Senator Moss introduced a bill to accomplish this in the Senate, and on March 28, Congressman Gunn McKay, representing Utah's First District, introduced a companion bill into the House. In his memorandum accompanying the bill, Senator Moss revealed the panic which Judge Ritter's decision had caused up and down the length of the Upper Colorado Basin: "What this really means is that the Upper Basin states will lose their ability to use water apportioned to them under the "law of the river" . . . I have reintroduced the bill this session and I ask that hearings be held on it immediately. It is the only certain way to head off the catastrophe which is now hanging over the entire Colorado Basin Project."[48]

Not even the Utah congressional delegation was unanimous on the subject, however. Wayne Owens, a native of Panguitch in southern Utah's Garfield County and now representing Utah's Second District, stated that he was unwilling to support the call for new legislation. Said Congressman Owens, "The overriding Utah interest in this matter is not clearly apparent. Reclamation Bureau claims of multi-million dollar losses to Utah are substantiated only by their own projections and marketing theories . . . My attempts to find the facts have not been wholly successful."[49]

Senator Moss never got his hearing and, despite the full backing of Wayne Aspinal, still chair of the House Interior Committee, Congressman McKay's bill was going nowhere just as fast. What this flurry of legislative activity did accomplish, however, was to reinvigorate the debate over the extent to which Lake Powell actually threatened the structural integrity of Rainbow Bridge. Dr. Paul Alexander, a Grand Junction, Colorado, geologist, echoed the official U.S. Bureau of Reclamation position, namely that Lake Powell would have no effect. He stated, "There is no geologic reason to think the water will endanger the strength of the bridge. The base is formed of the hard Kayenta sandstone, and summer heat and winter erode it more severely than does standing water."[50]

Others, however, with equally valid geologic credentials weren't so sure. Said William Breed, curator of geology at the Museum of Northern Arizona,

> Bureau of Reclamation engineers have stated that the base of the Bridge would not be weakened by submergence under water. The main basis for their conclusions is that in many places the rock that forms the base of Rainbow Bridge is intermittently saturated with ground water and therefore the rock should not lose its strength by the addition of more water. However, there is an important difference between percolating ground water and large bodies of surface water, such as a lake. Tests of the physical strength of the Kayenta Sandstone under saturated conditions as opposed to dry conditions were called for by some scientists years ago, but to my knowledge have never been made.[51]

In a letter to Senator Moss, a young southern Utah high school math and physics teacher pointed out that the weight of the water under Rainbow Bridge when Lake Powell reached full pool would be over 5 million pounds and that a force of this magnitude on the walls of Bridge Canyon could prove disastrous. He went on to state,

> The problem is that the Kayenta Sandstone is not a solid sheet formation like the Navajo Formation above it, but instead is fractured laterally in the same direction as the force exerted by the water. This means that the lower layers, under greater pressure than those above, could shift relative to those on

top, destroying the foundation on which the Bridge rests . . .[52]

This same problem was also pointed out later by geology professor Charles B. Hunt of Johns Hopkins University:

> A further potential hazard at Rainbow Bridge is small-scale slippage of rock along existing joints and faults. Such slippage has been documented for certain large reservoirs, and is attributed to the disequilibrium caused by the added weight of the water, plus aqueous lubrication of the faults . . . If even small movements occurred, the structure of the Bridge would be endangered.[53]

Even though faced with this potential threat to one of its most unique units, the National Park Service continued to display the broad yellow streak that had been its characteristic ever since the controversy over the bridge first developed. In a memorandum to the director of the midwestern region of the Park Service, the associate director for legislation stated that the service's official position on the Moss-McKay bill was that the proposal not be enacted in its present form but, ". . . we did not object to legislation which would reaffirm the Congressional policy that no dams or reservoirs should be within a national park or monument with a specific exception to that policy with respect to Rainbow Bridge National Monument."[54] In other words, the branch of government entrusted with the protection of all national parks and monuments was perfectly willing to push little Rainbow Bridge out into the cold and to slam the door behind it. This was a base and cowardly thing to do, and the Park Service knew it.

However, most people in the federal government and in the executive branches of the Upper Basin states knew that the legislative path held little promise. Even if a bill repealing the legal protection afforded Rainbow Bridge could somehow be pushed through the House, it would take only a comparative handful of dedicated Senators to block any action by the upper chamber. Hence, the only practical hope for reversal of the situation seemed to lie in the courts through the long and cumbersome appeals process. It was here that government attorneys began to gain a small glimmer of hope. Willis Ritter may have been a learned and thoughtful judge, but over the years he had developed the nasty habit of having a disproportionate number of his decisions overturned by a higher court. The environmental community realized this and knew that such a catastrophe was a distinct possibility.

Once Judge Ritter had denied the government's appeal to stay his own order halting the waters of Lake Powell at the monument boundary, C. Nelson Day filed the papers necessary to have the case heard by the seven judges of the Tenth Circuit Court of Appeals in Denver, Colorado. The first order of business was to put a hold on Ritter's order keeping Lake Powell below 3,606.1 feet, at least pending a final decision of the court, and here the government hit pay dirt. The preliminary motion to stay Judge Ritter's order was argued by Clyde O. Martz, assistant attorney general for Colorado, and opposed by Owen Olpin, attorney for the conservationists. On May 1, 1973, a three-judge panel of the court voted 2-1 to grant the government's motion. Voting to allow Lake Powell to cross the monument boundary were Judges Oliver Seth of Santa Fe and William C. Doyle of Denver. The lone friend of Rainbow Bridge that day was the court's presiding judge, Delmas C. Hill of Wichita, Kansas—once again the monument had lost by one vote.[55]

The very day Judge Ritter's order was set aside, the Bureau of Reclamation pared the flow through the power plant at Glen Canyon Dam from 26,240 cfs to 15,000 cfs. With runoff from the winter's snowpack now pouring into Lake Powell at the rate of 20,000–30,000 cfs, the reservoir, which had been drawn down to 3,590 feet in elevation, would once again begin to rise up Bridge Creek.

Alarmed at losing even this preliminary legal round, conservationists immediately appealed this decision to the Supreme Court through Associate Justice Byron R. White. It was to prove a futile gesture. On the following Monday, May 7, the Court released a terse announcement refusing to vacate the stay, thus allowing Lake Powell to rise with impunity pending a final decision by the appellate court. With runoff into the reservoir now reaching its peak, the pool's surface elevation was rising nearly ten inches a day, and within three weeks was once more closing in on that imaginary line in the sand. On Tuesday, May 22, just after midnight, the water reached 3,606.43 feet. Lake Powell was again within the boundary of Rainbow Bridge National Monument.

Two days later, on Thursday, May 24, the entire seven-judge panel of the U.S. Tenth Circuit Court of Appeals met in Denver to hear the case. On that day

Friends of the Earth, the Wasatch Mountain Club, and Ken Sleight were joined by the Sierra Club and twelve other environmental organizations with attorney James Lee pleading their cause. Mr. Lee told the court that over the years Congress had explicitly denied requests to build dams and reservoirs in Yellowstone, Dinosaur, and Grand Canyon. Hence, the letter of the law and the intent of Congress were both crystal clear: "[N]o dam or reservoir . . . shall be within any national park or monument." The judges listened to the legal arguments for about an hour and then announced that a decision might be expected within a week.[56]

However, the court did not reply in a week, nor a month, or even in two months, and as the summer dragged on and the friends of Rainbow Bridge nervously waited, Lake Powell continued pushing a narrow finger of water up the Kayenta Sandstone gully toward the great arch itself. On July 31 the lake reached an elevation of 3,644.1 feet, just ten feet in elevation from a point directly under the bridge.

Finally, on August 2, 1973, the long-awaited document was released. In a 5-2 decision, written by Judge Oliver Seth, the court held that Congress had indeed repealed 43 USC 620 by implication and that, despite the clear wording of the statute, Rainbow Bridge was entitled to no protection from the waters of Lake Powell. The court stated,

> The record demonstrates affirmatively that Congress evaluated the consequences of water encroachment into Rainbow Bridge National Monument, and the difficulty, unsightliness of the protective dam, pumps, and tunnel, and the costs, and made a choice. The resultant specific prohibition as to the use of funds for protective works in the face of the inevitable water advance in the streambed under the Bridge has overridden the expression of intent in section 3 of the Storage Act as to Rainbow Bridge in section 1 thereof.[57]

Voting with the majority were Judges Oliver Seth, William J. Holloway, Robert H. McWilliams, William E. Doyle, and James E. Barrett.

In a stinging, bitter dissent written by Chief Judge David T. Lewis and joined by Delmas C. Hill, the minority stated,

> . . . however viewed, [we] consider the action of the majority to be a deep trespass upon the prerogatives of Congress and a clear and dangerous violation of the doctrine of separation of powers . . . We start then with an original congressional mandate, not expressly repealed by any subsequent Congress, that *no* reservoir shall be within *any* national monument and the undisputed fact that the Rainbow Bridge National Monument is now flooded even under the Bridge and with the judicial sanction of repeal by implication. To [us], the judicial words "repealed by implication," by very definition carry heavy overtones of erosion into the doctrine of separation of powers. So, too, the chosen words contained in the main opinion "reversal of a previous position" describe an equally dangerous judicial aggression.[58]

The Circuit Court's decision dealt a sickening blow to the conservationist cause, but the battle to save Rainbow Bridge was not over. On October 26, 1973, the tireless Owen Olpin filed the papers necessary to carry the suit over Rainbow Bridge to the United State Supreme Court. The petition asserted,

> The Court of Appeals' judgment contradicts numerous United States Supreme Court decisions as well as decisions of Courts of Appeal in other circuits defining the power of courts to declare statutes repealed by implication . . . Unless the courts check the license the Secretary and the Commissioner have taken with congressional policy, other parks and monuments may also be compromised by utilitarian encroachments of the kind that Congress historically has prohibited.[59]

The minority position accompanying the appellate court decision gave the plaintiffs hope that this was an issue the high court would wish to review, but there was now nothing anyone could do but wait. It was also a time for a certain amount of reflective introspection. Why would conservationists go to such astounding lengths to protect a tiny rectangle of desert wilderness containing but one unique geologic feature when the reservoir threatening it was simultaneously gobbling up countless miles of some of the most beautiful scenery on the planet? Why not simply abandon the whole enterprise and spend the money, time, and energy fighting for the preservation of much larger threatened areas elsewhere? Rob Thompson, conservation activist and outings chairman for the Uinta (Utah) Chapter of the Sierra Club said it best for all those involved: "For those who could not forget 'the place no one knew,' the rescue of Glen Canyon's remaining beauty is the object of enduring determination. As for Rainbow Bridge, this generation's

legal and moral obligation to leave this great stone monument unscarred and unimpaired is absolute."[60]

In the meantime a number of states, through the actions of their attorneys general, were joining the suit on the side of the conservationists, filing friend-of-the-court (amicus curiae) briefs with the Supreme Court. In fact, by the time the Court was ready to consider the matter sixteen states, Alabama, Arkansas, Florida, Idaho, Illinois, Kentucky, Michigan, Minnesota, New York, Ohio, Pennsylvania, South Carolina, Texas, South Dakota, Vermont, and Washington, had filed such briefs asking the Court to take up the matter and to reverse the lower court's ruling. In the brief for Florida submitted by Kenneth F. Hoffman, the assistant attorney general, it was stated, "Nothing in the legislative history or the subsequent actions of congress relating to the two statutory sections . . . indicates any repeal by implication. To observe a parsimonious attitude of Congress and move from there to an implied repeal is a 'Liebestraum leap' going beyond the outer limits of judicial activism."[61]

All this proved not to be enough. On Monday, January 21, 1974, the Supreme Court announced that it had denied the appeal and would not hear the case. This let stand the court of appeals ruling and left the conservationists at the end of a long and bitter road—there would be no protection for Rainbow Bridge. Three justices, William O. Douglas, Byron R. White, and Harry A. Blackmun, had indicated a desire to hear the case, but it takes four votes to bring a matter before the Court. Once again the monument had lost by a single tally.[62]

Rainbow Bridge was a cause, however, which seemingly refused to die. Now it was the turn of the Navajo Mountain religious community to try their hand at saving the monument. On September 3, 1974, three Navajo medicine men and three chapters (regional administrative subunits) of the tribe filed suit in the U.S. District Court for Utah alleging that the flooding produced by Lake Powell had desecrated a site sacred to the Navajo people. The complaint, filed by attorney Eric Swenson on behalf of the plaintiffs, asserted, "Rainbow Bridge is a religious symbol and is a focal point through which many prayers and religious ceremonies derive . . . Defendant operation of Glen Canyon Dam has resulted in destruction and desecration of many holy places of great importance . . ."[63]

The suit was heard in the court of Judge Aldon J. Anderson, now the federal district judge for Utah, who ordered a study prepared to test whether the Navajo claims had any merit in law. The study was undertaken by Karl W. Luckert, and the result was a book entitled *Navajo Mountain and Rainbow Bridge Religion* (Flagstaff: Museum of Northern Arizona, 1977). Despite the fact that the study showed a clear historical and enduring tie between the Navajo people and Rainbow Bridge, Judge Anderson ruled on January 13, 1978, that ". . . there is nothing to indicate that at the present time Rainbow Bridge National Monument and its environs has anything approaching religious significance to any organized group . . ."[64] The decision, which clearly flew in the face of fact and reason, was the subject of much derisive comment, but in fairness to Judge Anderson it must be pointed out that the one organized entity which could have brought substance to the plaintiffs' claim, namely the Navajo Nation, was not a party to the suit. In fact, Navajo tribal chairman Raymond Nakai stood at the dam in June, 1969, and proudly proclaimed, "A conservationist is one who is content to stand still forever. Major Powell would have approved of this lake. May it ever be brimming full."[65] The suit was appealed to the Tenth Circuit Court in Denver and then on to the Supreme Court. Neither judicial body saw fit to overturn Judge Anderson's ruling, and so died the last hope that Rainbow Bridge National Monument could be spared its fate.

By the time the Supreme Court was denying the conservationist petition during the winter of 1974, Lake Powell had receded back down Bridge Creek and away from the arch, but as the weather warmed and runoff from the high country began to flow into the reservoir, the water once again resumed its upward progress. On May 16, 1974, slackwater slid silently under the bridge, and by May 23 it had formed a pool there three feet deep.[66] By the time the Navajos filed their suit that fall the reservoir had peaked for the year at 3,669 feet, placing water fifteen feet deep under the Great Rock-Arch.

Glen Canyon Dam had claimed its last significant victim, but it still had a lot of water to impound and several feet more to rise. On Sunday, June 22, 1980, at precisely 9:42 P.M. MDT, Lake Powell reached 3,700 feet—the reservoir had filled.[67] Water now stood forty-six feet deep under Rainbow Bridge and slackwater extended through the monument and spilled over onto adjacent reservation land. This was as high, give or take a foot or two, as anyone expected the lake to go, but nature has a way of confounding

humanity's expectations. In 1983, after a winter of near-normal precipitation, the springtime produced record snow and rain followed by a quick warm-up. The combination caught bureau hydrologists off guard, and Lake Powell, which had been drawn down only enough to accommodate normal inflow, began to rise at a rate beyond the controlling capacity of the dam's power plant and outlet tubes. Following a summer of frantic engineering activity, during which the structural integrity of Glen Canyon Dam itself was seriously threatened, Lake Powell finally peaked and began a slow but measurable retreat. At its highest point, achieved on July 14, 1983, the lake stood at 3,708.34 feet, placing water a bit over fifty-four feet deep beneath Rainbow Bridge. It was a level that neither conservationists nor reclamationists ever wished to see repeated.

As Lake Powell crept quietly through the monument and began to rise toward its normal pool elevation and beyond, Rainbow Bridge itself was being closely watched. In its decision overturning Judge Ritter's protective ruling, the Tenth Circuit Court of Appeals had remanded jurisdiction back to the District Court in Utah for a period of up to ten years, during which time the bridge was to be monitored for any signs of damage due to the rising waters beneath it.[68] To comply with the court's order, the Bureau of Reclamation instituted an extensive program to observe every aspect of the bridge's behavior during the time specified and to guarantee that the reservoir was causing no structural harm to the monument. A spring, 1974, memorandum outlined the bureau's strategy:

> Memorandum May 14, 1974
> To: Regional Director, U.S.B.R., Salt Lake City, Utah
> From: Regional Geologist, U.S.B.R.
>
> The monitoring program will consist basically of the following:
>
> 1. Surveys: Includes precision transfer points from U.S.G.S. monuments, triangulation, topography, sedimentation, Bridge control points, and canyon erosion control section. It has been decided to monitor the distance between canyon walls by triangulation in addition to direct measurement by Lovar tape.
> 2. Establishment of 3 Whittemore gauge stations on the Bridge legs.
> 3. Geologic mapping as needed.
> 4. Photographic coverage as needed.
> 5. Weather station installation on raft
> 6. Seismic station in Monument.
> 7. Rock and water samples where required.
> 8. Other measurements as required.
>
> William Mann[69]

Monitoring of the bridge actually began with preliminary survey operations on April 16, and by the time the bureau had everything in place the program was a model of precision. Three small reflecting mirrors were placed on the upstream face of the bridge so that motion and variation in the shape of the arch could be monitored by laser beams. This would enable the bureau to detect changes on the order of less than .01 inch, far smaller than what could be detected by traditional survey techniques. The Whittemore Strain Gauge stations would monitor any widening in the surface cracks already apparent in the bridge's structure. Rock samples were collected regularly to monitor moisture content in the walls of the canyon below the bridge, and photographs were used to detect any surface motion of the boulders and soil within the monument. Electronic measurement was supplemented by standard survey techniques involving both on-ground and aerial mapping. Hence, from April, 1974, through June 1, 1985, there was very little that could happen within Rainbow Bridge National Monument that would escape detection.

The bureau's monitoring program produced a number of surprises, not the least of which was the discovery that the bridge was actually smaller than everyone had thought. In 1909 William Douglass had measured the height of the bridge to be 309 feet and the width to be 278 feet, and these figures had stood as official for nearly seventy years. The very precise surveys the bureau was now making revealed that the height was only 291 feet and the width 275 feet.[70] The elevation at the top-center of the bridge measured at 3,945.46 feet, but just off center to the right the elevation was found to be two feet higher. It is still by far the largest natural bridge in the world, but the fact that the Douglass survey had been so far off came as a major shock.

A second revelation was how much motion the bridge exhibited naturally in response to temperature changes in the air around it. As the atmosphere warms, the ribbon of sandstone making up the bridge is thoroughly heated, causing the bridge to rise and widen. Conversely, as the air cools the sandstone contracts, thereby lowering and narrowing its dimensions.

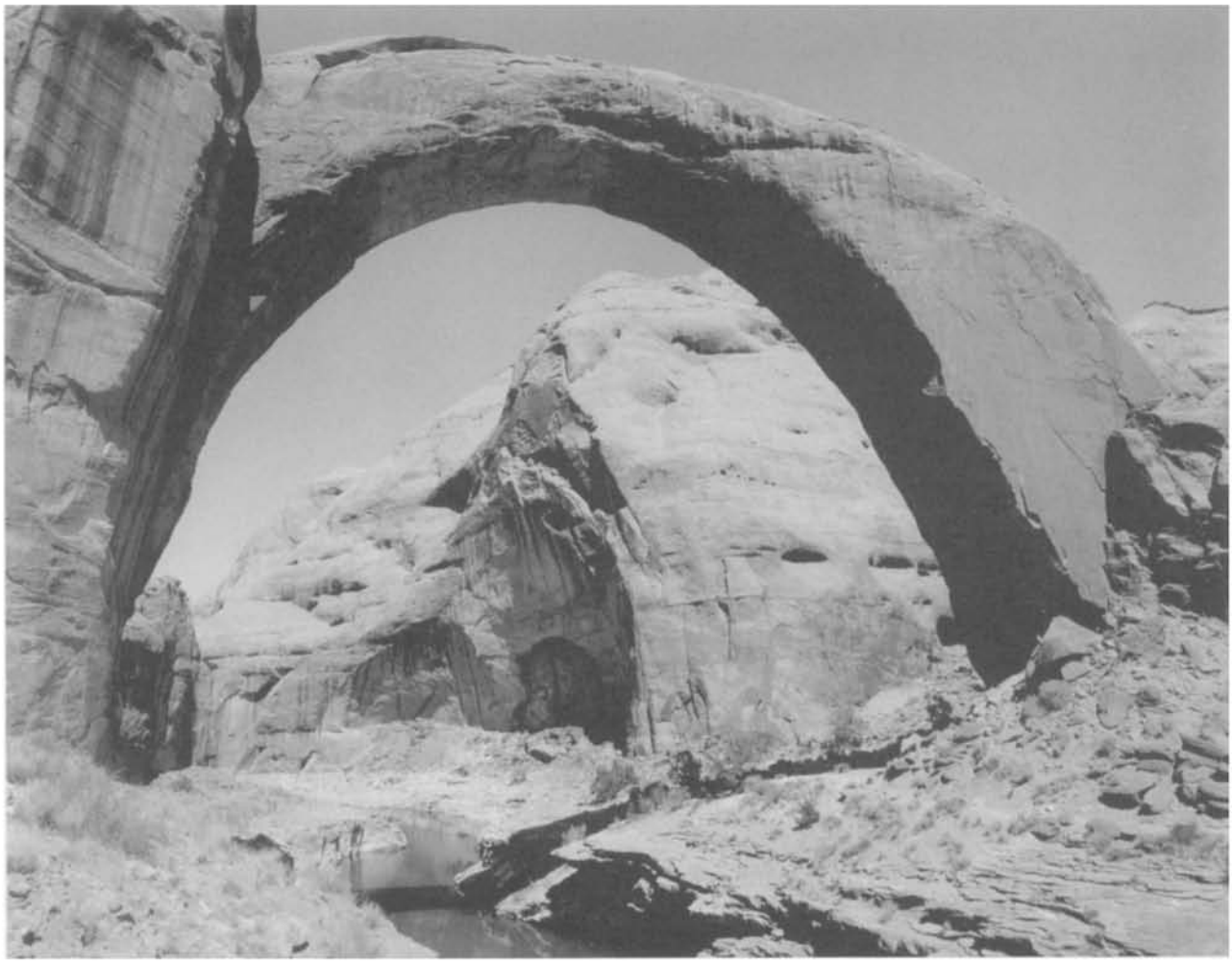


Figure 57. Rainbow Bridge with Lake Powell at full pool, April, 1983.

The bridge, then, acts as a giant thermocouple, changing dimensions ever so slightly on a daily and seasonal basis.[71] In fact, the Great Rock-Arch is 0.387 feet (just under half an inch) higher in July than it is in January.[72] Geologists had expected some variation of this type, but the degree of motion was a major revelation. This much cyclic expansion and contraction does pose a significant threat to the structural integrity of the bridge and is perhaps one source of the numerous surface and internal cracks the monitoring detected.

The final report of the program was submitted by the Bureau of Reclamation to the Federal District Court in Salt Lake City during the summer of 1985. It found, predictably, that ". . . the presence of Lake Powell at its various operating levels has had no measurable detrimental effect upon the structural stability of Rainbow Bridge."[73] With respect to the sandstone forming the foundation of the bridge, the report concluded that there was "no evidence of undercutting, weakening, or solutioning of the rock,"[74] and, further, that changes in the moisture content of the Kayenta Formation due to the reservoir were "inconsequential."[75] The absurdity of trying to measure in only ten years the long-term geologic effects of a brand-new reservoir on a sandstone structure millions of years old seems not to have occurred to the authors of the report, but the instructions of the court had been fulfilled. In 1985 the Bureau of Reclamation packed up its survey instruments and left the monument. There has been no regular surveying or monitoring of Rainbow Bridge since that time, this in spite of the warning issued by geologist Eugene M. Shoemaker of the California Institute of Technology,

Figure 58: Bureau of Reclamation employees reading the Whittemore Strain Guage on the northeast leg of Rainbow Bridge, June, 1983.

who said, "I think there can be little doubt that flooding the base of Rainbow Bridge could shorten the lifetime of the Bridge."[76]

Aside from the debate about whether the reservoir behind Glen Canyon Dam will eventually have a disastrous geologic impact on the Great Rock-Arch, there is no doubt that the coming of Lake Powell has had a profound effect on the national monument. In 1962, the last full year of visitation before the gates closed at the dam, only 2,918 people visited the bridge. These days nearly ten times that number arrive every summer month, almost all coming by boat from either Wahweap or Bullfrog Marinas, and for many, Rainbow Bridge is simply a brief side-excursion during a day devoted to fishing or water skiing.

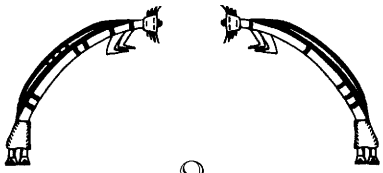
Those who come via a commercial tour will spend less than an hour at the monument, just enough time to walk from the boat dock up the short Park Service trail in order to snap a few long-distance photos near the interpretive displays. Hence, in less than a generation Rainbow Bridge has gone from being the veritable symbol of wilderness, located precisely in the middle of nowhere, to a new existence as a tame, almost urbanized curiosity, as accessible to motorized tourism as the Washington Monument. It is almost a certainty, therefore, that the Navajo Indians who sued over the issue were right after all—the spiritual nature of the bridge has been totally lost. As George Reiger of the Audubon Society has written,

> . . . there is nothing special anymore about visiting Rainbow Bridge . . . While some may argue that the beauty of the canyonlands has been enhanced by the lake, the solitude that Edward Abbey and Zane

Figure 59: The top of Rainbow Bridge. Three small mirrors were placed on the upstream face of the Bridge to reflect lasers measuring any movement in the bridge during the court-mandated monitoring.

> Grey felt essential to perceiving the land's beauty is increasingly in short supply—in large part because of the lake. Even if the flooded buttes and canyons have a kind of paradoxical splendor—a study in contrasts—their meaning is often lost in the chatter of tour guides or the roar of passing boats. One is left with self-developing snapshots for an engineering office wall.[77]

Today it is no longer possible to stand under the Great Rock-Arch and feel that special kinship with those who came before, whether the Anasazi, Cummings, Wetherill, or Teddy Roosevelt. In fact, the setting of the bridge has been so totally altered that it is possible to doubt that one is gazing at the same arch they saw. What really rankles conservationists, however, is that this despoliation of a precious national treasure occurred in spite of two laws, either of which should have been enough to preserve its natural setting. Those laws were simply ignored, first by Congress, then by the administration, and finally by the courts. Those statutes still stand on the books, unaltered, and unrepealed: ". . . no dam or reservoir . . . shall be in any national park or monument," and ". . . the Secretary of the Interior shall take adequate protective measures to preclude impairment of the Rainbow Bridge National Monument." Those words have appeared in every single edition of the United States Code since 1956, and they stand there today, a living rebuke to those custodians of our heritage who were unable to rise to the special challenge posed by Rainbow Bridge. As the inimitable Casey Stengel was so fond of saying, "You can look it up."



8

Reprise and Reflection

April, 1997. A brilliant sky and a surprisingly strong sun have us in a fine mood as we swing the red Jeep Cherokee into what passes for a parking lot at the head of the north trail to Rainbow Bridge. This country is not noted for consistently good spring weather, so we feel fortunate to have selected what appears to be a perfect weekend. My hiking companion for this trip is Bill Hoffman, a recently retired pilot with American Airlines who has some really rugged trails in the Grand Canyon under his belt and a lust for adventure deep in his heart. Despite owning a boat which looks as if it could cross an ocean, Bill has never seen the bridge. Hence, it will be a pleasure introducing him to the Great Rock-Arch as it should be experienced—overland with a good bit of effort attached.

The drive north from the main highway wasn't nearly as rough as expected. In fact, the first fourteen miles of what ten years ago was an all-dirt track is now covered with a silky-smooth and well-engineered coating of asphalt. The scuttlebutt is that once the required archaeological surveys are completed the whole route all the way to Navajo Mountain will be paved. Twenty years ago I believed that its inherent isolation would guarantee that the Navajo Mountain community would remain a bastion of Diné language, customs, and tradition. Now it seems inevitable that with the coming of pavement, electricity, and the ubiquitous satellite dish, this part of the reservation will become much like the rest of the Navajo Nation—a strange blend of a vanishing way of life intermingled with the worst of high-tech American glitz.

The state of Utah has built a new elementary school tucked around the northern edge of Navajo Mountain only a few miles from the local chapter house. This long-overdue improvement will keep the youngest Navajo children from having to leave home to attend the BIA boarding school at Shonto. Clustered around the school is a developing settlement, very uncharacteristic of the Navajo, which the new topographic maps are calling Rainbow City. A huge blue and white sign at the edge of town proclaims this to be a project of the Department of Housing and Urban Development (HUD). The rows of identical ticky-tacky houses look as if they were suddenly transported from some low-income housing project in Anywhereville, Kansas. There is certainly nothing traditional here—not a hogan or ramada in sight. The little village lacks even a grocery store or gas station, but I'm sure both are simply a matter of time.

The good road ends near the school, so the final four miles to the trailhead are over a primitive track strewn with lots of loose rock and containing a number of steep pitches. Numerous side tracks branch from the main road, so besides keeping a close watch on the route ahead we must also consult frequently with the maps and guides. I shift down into the 4WD-high range just to keep from lugging the engine and feel suddenly grateful for the heavy-duty tires rolling under us. On the way in we pass a Northern Arizona University van which had apparently been driven as far as its custodians dared. Just before the end of the road we pass a small sedan parked in the shade of the only juniper tree in sight. The "official" parking lot is deserted; it is obvious that we will be encountering few other hikers on this trip.

It is about 1:15 P.M. before we are ready to shoulder our packs and head west along the narrow, rocky

path that serves as a trail. The great northeastern face of Navajo Mountain rises abruptly on our left, still bearing a heavy remnant of the past winter's snow. The trailhead is perched on the edge of a shallow gully, so we begin with a steep descent over a series of vertical sandstone ledges before reaching the stream bed and starting a gradual ascent on the other side. According to the map we have only six miles to walk before reaching our first camp, but the way ahead is over unknown terrain and I'm hopeful we can make good time, at least in the beginning when we are both still fresh.

The trail alternately crosses and heads a number of small watercourses that are part of the many-branching Cha Canyon system, which served as the first critical campsite for Wetherill, Cummings, and Douglass back in 1909. The main stem of the canyon is obvious—a moderate gash in the terrain with some water and a lot of vegetation. I cast about looking for a campsite, and seeing none conclude that perhaps the Cummings-Douglass party encountered this canyon further down. The trail so far shows little evidence of heavy use, and the surrounding country has nothing in the way of livestock droppings. We do, however, encounter several gated drift fences, always signed with the usual "Please Keep Gate Closed" instructions, so at one time someone must have been running cows or horses in this country. (Navajos are noted for their sheep, but this side of Navajo Mountain is definitely not suited for them.)

About an hour into the hike we encounter one of those little pockets of loveliness which make it easy to forget sore feet and the heavy pack. A wide valley stretches out before us through which a small stream meanders happily over a slickrock bed. A large upstream pool, surrounded by sedge and rushes, betrays the location of a spring, and further down, the deep, calm pockets perfectly reflect the brown earth and blue sky. This would be a perfect camping place, and I wonder if perhaps the Cummings party didn't stop here rather than back at the main Cha Canyon gorge further east.

Once across this small tributary the trail turns sharply left, begins a very steep climb out of the Cha drainage and heads due north. The rock underfoot combined with the steepness of the route make for a hazardous and tedious ascent. Now on top, I head for the shade of a large pinyon pine and wait for Bill to catch up. Despite being a decade older than I and still nursing a trick knee from an accident in Tapeats Creek, he is keeping a good, strong pace. Any doubts I may have entertained about his hiking capabilities are erased when he tops the rise just a few minutes after me. It is time to sit in the shade, share a cool drink, and contemplate the view. To the south the great bulk of Navajo Mountain towers over the country, its serrated summit ridge giving testimony to its relative geologic youth and its laccolithic origin. To the east we can see a panorama of the rugged terrain through which we have just come and a lot more besides. From here it is possible to be almost grateful that the site B barrier dam was never built. Had it been, there would now be a paved road where we sit, and the wilderness character of this amazing landscape would be only a memory.

It is the north, however, which draws the bulk of our attention and which provides the most spectacular scenery. The great canyon systems of the San Juan and the Colorado lie spread out before us. One huge gash to our right, fronted by sheer sandstone walls streaked with great tapestries of desert varnish, is clearly the canyon of the Escalante River. Surmounting everything are the ramparts of the Kaiparowits Plateau pointing back toward the pink limestone of Table Cliffs Plateau and Bryce Canyon. Deep within this impossible landscape lies Lake Powell, out of sight and, for now, out of mind. This is exactly the same view first looked upon by the Cummings-Douglass Expedition of 1909, to us a source of wonder and inspiration but for them, perhaps, a wellspring of anxiety and dread. There is probably no sight in the world more desiccated, wild, and uncertain than that which stretches before us here, a wilderness whose value is clearly beyond measure.

According to the map our viewpoint is at mile 2.8, so we still aren't halfway to our planned campsite. Hence, we resolutely pick up our packs, march off down the trail, and within a few minutes find ourselves standing on the rim of a spectacular gorge known as Bald Rock Canyon (plate 12). From where we stand it is almost possible to drop a rock directly to the stream bed several hundred feet below. The constructed trail, probably put in its present form by the Civilian Conservation Corps in the 1930s, descends via a series of switchbacks through the Navajo Sandstone and then angles at a gentle grade straight down-canyon. This is the defile which caused the discovery expedition so much trouble, costing them nearly a day to find a way across. The modern trail follows a natural

break in the wall, but without at least some construction it could not have served for horses.

Where the trail reaches the little stream and crosses it there is a fine, well-watered campsite shaded by great old cottonwoods and backed with sheer sandstone cliffs incised with gigantic alcoves. The way out of this little paradise is via a long, steeply sloping, and extremely rough valley tilted toward the west. The trail twists first one way and then another as it seeks to negotiate the very broken and complex topography leading toward a summit which never seems to get any closer. At last we top out on a narrow, wind-scoured ridge and behold a landscape as breathtaking and colorful as any I have seen. Slickrock domes, looking for all the world like the frozen sand dunes that they are, roll off to the east in endless profusion, setting off the multiple peaks of the Henry Mountains, now cloaked in the gathering haze of late afternoon. To the northwest stand great cliffs colored in orange, pink, and white, pure naked slickrock stretching for miles in a great semicircle of incredibly broken and seemingly impassible magnificence. Our path heads steeply down into a west-tending tributary of Nasja Creek over curving sandstone domes which threaten to send us hurtling uncontrolled into the abyss. It was here that the Cummings-Douglass party found their only evidence of a trail, shallow grooves cut into the sandstone which they named the Hoskininni Steps. Clearly, their only purpose was to provide a footing for horses, and since the Anasazi had no such animals their origin must have been nineteenth century Paiute or Navajo. Stephen Jett doubts even that degree of antiquity, but it must be remembered that by the time he saw them they had undoubtedly been reworked with metal tools, first by John Wetherill and then by the CCC crews decades later.[1]

For modern hikers, such as Bill and I, the numerous steps leading down the slick rock provide some measure of relief and security on the steep, knee-twisting, ankle-busting descent. On the way down we encounter the Northern Arizona University party whose van we had passed along the road earlier in the day. They are part of some "outdoor leadership" program, a bunch of fresh-faced, in-shape kids that seem to be having the time of their lives stomping around in a wilderness that few of them will, in all probability, ever see the like of again. They are headed for a camp in Bald Rock Canyon before returning to Flagstaff.

At the bottom we encounter the opposite side of the coin. There, perched on a boulder and nursing some very painful blisters, is a gentleman who is at least in his upper seventies, if not older. His pack looks huge, and there is a definite note of resignation in his voice as we exchange trailside pleasantries. He is the tail end of a party, all older men from Flagstaff, seeking to walk between the two Navajo Mountain trailheads. The rest of his party has gone off down toward Nasja Creek and camp, leaving their companion to his own devices. This is never a smart move for any party, but an invitation to tragedy for one such as this. The presence of a trail does not make this country safe—it is just as wild and dangerous as it was in 1909 when John Wetherill led the first party of white men down off that ridge. A fall, a twisted ankle, or simple dehydration would leave the unaided hiker in serious trouble rather quickly. The "every man for himself" theory of backpacking, which I am seeing more and more along the trails these days, has no place in this unforgiving country.

The route now follows the bed of a sandy and narrow gulch, and in a short distance we emerge onto a platform overlooking the head of a large park which the discovery party called Surprise Valley. It was here that Nasja Begay finally caught up with the people he was supposed to guide to Rainbow Bridge, so the creek flowing through this lovely glade was named for him. Getting down to the water and across to a campsite presents our last challenge of the day. The water of countless floods and, perhaps, an ancient ice floe have deposited a moraine of boulders through which we have to work our way down into the valley. The stones are only loosely cemented by sand and mud, so the footing is precarious even though the trail through them is very clear.

The valley is large, flat, and nearly circular, offering many sites for a good camp. Large junipers provide some shade, and the deep pools in the creek bottom are an irresistible temptation for hot and tired feet. A rough-hewn picnic table sits at the south end of the camping area, almost certainly harkening back to the days when this place served as the principle staging ground for the CCC project which improved much of the modern trail. This was also the spot used by John Wetherill as a stopover for the commercial trips he led to Rainbow Bridge. It so impressed Zane Grey that he used it, properly embellished, of course, as the backdrop for crucial scenes in several of his novels. Surrounded by towering cliffs of multihued

sandstone, watered by a spring-fed creek, and surmounted by Navajo Mountain, it remains today a wilderness paradise.*

Bill and I stumble into camp about 5:30 P.M.—it has taken over four hours to cover the six miles from the trailhead, but considering the terrain through which we have come, this is to be expected. With evening gathering rapidly around us there is time for little more than setting things up and cooking dinner before darkness erases all but the barest outlines of cliff and canyon. I position my sleeping bag for a good view of Hale-Bopp Comet, now conveniently placed high in the northeast against a bejeweled backdrop of inky sky. Sleep comes quickly and is mercifully deep.

The morning dawns clear and bright, and we are on the trail early, heading up a rugged tributary which feeds into Nasja Creek smack in the middle of the campground. A short way up on the left is lovely Owl Bridge, beautifully silhouetted against the pale morning sky (plate 13). This feature is also named for Nasja Begay, whose name means "Son of the Owl." The trail leaves the floor of the canyon early on and stays high on the right wall until it reaches the head of the gulch, about a mile and a quarter above Surprise Valley. Here the route scrambles hard for the plateau above through a series of impossibly steep switchbacks. The footing is uncertain, as large rocks have fallen onto the trail and the sand is deep and loose. Several early commentators on the Wetherill-led trips mention this spot as being particularly hazardous, since a falling horse at this point would crush those waiting below (plate 14).

Once on top our morning effort is rewarded by a stretch of trail that is as level as it gets in these parts. The easy trail is enhanced by the usual scenic spectacle. Here, out in the open, great sandstone blocks, topped with islands of the shaley red Carmel Formation, shoot skyward like so many medieval castles, and the vertical escarpment of the Kaiparowits Plateau hovers complacently in the near background. However, in all-too-short a time the reverie ends and at mile 8 we reach the lip of a sheer drop into Oak Creek. The discovery party, perhaps still euphoric with the knowledge that they were really going to reach the bridge that morning, called this canyon Paradise Valley, but the name never stuck. It's a pretty-enough place, all right, with lots of greenery and a cold, spring-fed stream. The trail is nicely engineered and reaches the canyon floor via a few moderate switchbacks. This is a good place to filter some water for the canteens, so we take a break and visit with a few campers who backpacked up here from the lake. Californians all, they are clearly having a good time but are blissfully unaware that they are on the Navajo Reservation and, thus, need a permit to camp here.

The trail out the west side of this canyon simply heads straight up the steeply sloping bank with no engineering subtlety whatsoever. Once on top we still have to cross two moderately deep tributaries before leaving Oak behind, so when we finally reach the head of Bridge Creek at mile 10 we feel as though we have done a good morning's work. The trail into Bridge Canyon looks a lot like the trail out of Nasja Creek, only worse. It is narrow, steep, sandy, and rocky, and many of the juniper logs put in place to hold up the trail now lie useless at the bottom of the gully. As we pick our way down the worst part I remember that this is the spot on the Zane Grey Expedition where John Wetherill nearly lost a horse—and his life. Fortunately, the bad stuff is short and in no time we are angling down a well-marked trail deep in a beautiful sandstone gorge (plate 15).

At this point memories from a previous decade begin to force themselves to the surface of my attention. This is as far as Walter and I got up this canyon back in 1988 when Rainbow Bridge for the first time became a substantial piece of reality in my life. Familiar sections of the trail now evoke powerful, pleasant memories, and it gives me some satisfaction to realize that nearly ten years later I am still capable of getting my body and attendant gear into this country.

The trail sticks mostly in or near the canyon bottom, but at one point, for some inexplicable reason, it climbs up a steep sandbank and loops high above the treetops before descending even more steeply. Bill, who has a good sense of trails and routes, simply stays in the creek bed and encounters not a single obstacle. When I rejoin him he gives me a look reminiscent of those given to Captain Kirk by Mr. Spock.

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* Surprise Valley can also have its dangerous side. On a subsequent hike here in October 1997, Jerry and Susan McGlothlin and myself were caught in a twilight thunderstorm which turned placid little Nasja Creek into a raging torrent nearly seven feet deep and which nearly extinguished the three of us in an unrivaled display of lightning so close that the stench of ozone was unmistakable and the electrical discharge and associated thunder simultaneous.

At mile 12 we descend a beautifully constructed set of switchbacks onto the floor of Bridge Canyon proper. This is the spot Byron Cummings called Redbud Pass, and the small redbud trees, possibly the same ones he encountered, are still here. At this point snowmelt from Navajo Mountain mingles with springs rising from the creek bed to form a nascent stream thickly shaded with trees and every manner of brush. Lunch is taken in the deep shade of a canyon wall just above the confluence of Bridge and Redbud Creeks. The Great Rock-Arch is less than an hour's easy walk down-canyon.

This section of Bridge Canyon is even more wonderful than I remember. It is still early in the afternoon, I am relatively fresh and, unburdened by the oppressive heat of that day ten years earlier, better able to appreciate the beautiful coloration of the canyon walls, the delicacy of the tapestries, and the utter peacefulness of the place. Every twist and turn of the canyon reveals new delights and evokes a feeling of reverential awe that so much beauty could exist in such a small space. In what seems to be a short interval Bill and I are standing together staring a half-mile down the canyon at the small, delicate form of Rainbow Bridge, much as did Cummings and Wetherill so many years ago. Many who have stood here before us report being somewhat underwhelmed at their first sight of the bridge. In truth, however, it is not so much that the great arch is less impressive than expected but that its setting is so indescribably beautiful. Rainbow Bridge, then, is part of the total fabric of the place, not simply a natural wonder capable of being seen in isolation.

Our first order of business is to find a suitable camp, filter some fresh water for the canteens, and wash off the sweat and dust. In spite of the earliness of the season the air temperature down here is approaching 90 degrees Fahrenheit and it has been a hard seven miles. To stay in Echo Camp has been a goal of mine ever since we were so rudely sent away back in 1988, partly because it's such a fine camping area and partly because of the rich history associated with it. Hence, I turn hopefully toward the alcove, walk through the gated fence, and find the place deserted. It is all exactly as I remember it—the deep pool, the warm encircling walls, and the rusted, decaying remains of the Rainbow Lodge packers' camp. Even the old bed frames seem to be exactly where they were ten years ago. The only difference seems to be that the spring is no longer coursing down the little pipes that the Richardsons installed to direct the flow. Hence, it is necessary for me to walk a ways downstream from the pond in order to locate flowing water clear enough to filter.

While filling the canteens we are visited by a party of boaters who have hiked up here from the lake. They are university students, seemingly from all over, and one member of the party, a young woman, claims to have once been a seasonal park ranger here. She tells her friends that the debris scattered about the alcove is the remains of a miner's camp. It would seem that the educational standard for park rangers just isn't what it used to be.

It is 3 P.M. before we begin the walk down to the bridge. The narrow little trail is exactly as it has been for decades, so our approach to the arch is the same as that of the thousands of hikers who have come this way before us. At the national monument boundary gate, however, we encounter our first jarring reminder that this is not 1955. Beside the trail is a large, new Park Service sign informing us of all the things not permitted within the confines of the fence: no pets, no camping, no firearms, no swimming, et cetera. The sign seems disturbingly out of place here and is excessively negative. I fully understand the need to regulate visitor activities in a small place now visited by thousands every week, but this sign will be seen only by the comparatively few hikers that come down this trail, and it would seem, therefore, that a better way could be found to publicize the rules. (Perhaps a brochure could be included with the information sent out by the Navajo Nation accompanying its hiking and camping permit.) In any case, this sign seems to be indicative of an attitude creeping over the Park Service that visitors are an inconvenience which threaten the resource and are best managed in large groups and herded over preestablished routes. As a consequence, therefore, most park rangers are no longer schooled to interpret the environment to visitors but instead are trained largely in crowd control and law enforcement. Hence, most visitors to our parks and monuments leave almost as ignorant of the place as when they entered.

Once past the fence line the serenity returns and the wilderness again takes over. The bridge now stands stark and lean before us, no longer a small feature in a slickrock sea but rather a semicircle of stone dominating its surroundings and commanding our attention. From this perspective it is not hard to see why Rainbow Bridge National Monument has over

the years been the focus of so much controversy and bitter dispute. It is indeed a piece of the canyon country worth saving and preserving in its most pristine state, not simply one feature among many but a totally unique and wondrous sculpture.

The thin ribbon of trail still stretches before us, now lined with the spectacular pink and yellow blossoms of the prickly pear, the stately brittlebush, and the delicate lavender-on-white blooms of the sego lily, Utah's state flower. Within a few footsteps the bridge towers directly above us, and both Bill and I are compelled to look skyward as the flying buttress of stone passes overhead. When we look down again it is to behold a drear and ghastly sight. Before us lies not an extension of the wilderness but rather a totally civilized and man-dominated landscape. Instead of the unobtrusive little path we find a walkway nearly six feet wide, lined with stones and covered inches deep in pea gravel. It leads down to the murky waters of Lake Powell, now lying dark and sinister in the shade of late afternoon. The lake is bisected by a serpentine length of planking leading over the water to the Park Service boat dock, trash receptacle, and comfort station a short distance away. To hold this wood and metal monstrosity in place a web of cables stretches out in every direction to bolted anchors on the shore.

The lake has been drawn down about thirty feet below full pool to accommodate the runoff expected shortly from the mountains of Utah, Colorado, and Wyoming, and between its current surface elevation and the high-water line lies the Dead Zone. In this area of fluctuation, alternately flooded and then left high and dry, no plant life can survive for long. All that can be seen there now are the skeletons of brush whose existence predates Lake Powell. Without plants there is no reason for the herbivores to visit, and without them nothing for the carnivores to hunt. Nothing lives in the Dead Zone.

During even a relatively short period of inundation the lake covers all beneath it with a layer of slime and ooze which discolors all it touches and leaves a distinctive mark which is clearly visible as the waters recede. Boaters refer to this as the bathtub ring. Such is a feature of any fluctuating body of water, but here along the brilliantly colored walls of old Glen Canyon the slimy, light tan overlay is an ugly, jarring reminder that the lake is not natural and that it has done more than cover over a lot of scenery with pretty blue water. The edge of the bathtub ring is as straight as if drawn by a ruler and falls exactly where the water once lay. Hence, boulders which at one time stood half in and half out of the lake are now a natural desert color on top and a totally different shade on the bottom. The experts tell us that the bathtub ring is not permanent and that should the lake disappear the stain would soon flake away, leaving the canyon walls their natural color. However, I have tried several experiments at washing the deposit off a very small area and have as yet found no technique that will eliminate the entire discoloration. In any case, the bathtub ring is harder than it looks and so will not come off without a long passage of time. When the lake is low the pale yellowish band can extend up to fifty feet above water level and is omnipresent, staining side canyons, beaches, and even the skeletons of dead or dying trees. Even at high water the ring is still visible. Since the 1983 fiasco the Bureau of Reclamation has been keeping the surface elevation of Lake Powell well below the 3,700-feet level, just in case, and since the top of the stain sits at 3,711 feet this means there is always at least fifteen feet of discoloration extending above the pool.

Standing on the plank walkway and staring across the reservoir at the bridge, it is now possible to appreciate the full impact of Glen Canyon Dam on the monument. Both abutments of the great arch are above the high-water mark but not far above. The gorge beneath the bridge shows the bathtub ring stain in vivid detail, with the line between the natural and artificial stone coloration standing out in stark contrast. In the canyon bottom above the lake level sits the sand and silt deposited by flash floods coming down Bridge Creek. The little stream is making a valiant effort to push this deposit downstream into Lake Powell and is by and large succeeding. However, once the reservoir comes back up and another flood comes roaring down the canyon the sediment will be redeposited. Bridge Creek is, in fact, fighting a loosing battle—in time the gorge beneath the Great Rock-Arch will silt up to a depth of nearly fifty feet.

As it appears from this angle, Rainbow Bridge seems tired and shoddy, rather like a fine old house which the owners never quite finished painting and whose yard was never landscaped. Even the Park Service interpretive display gives an impression of neglect. The panels are chipped, scratched, and worn and are filled with inaccuracies. The dimensions of the bridge are incorrect, indicating that the display hasn't been updated since the early 1980s, and the

map showing the route of the Cummings-Douglass Expedition is almost totally wrong. The brochure being distributed at the Glen Canyon visitors' center is up-to-date and accurate, but it is worth noting that the photograph the Park Service uses on that publication shows the view one gets coming down the trail form Navajo Mountain, not the view as seen from the lake.*

Looking upon this dreary scene it is impossible to resist a rising sense of anger and frustration directed at those who failed to prevent this desecration from occurring. This bitterness is made all the more poignant by the realization that it was all so easily avoidable. There was nothing wrong with the Bureau of Reclamation's own site C barrier dam proposal—it was practical, reasonably priced, and probably doable with little inconvenience to either the bureau or the Upper Basin water users. The cost of the project could have been included in the appropriations for Glen Canyon Dam and repaid out of revenues generated by the sale of electricity. That nothing was done is due solely to the fact that the bureau and its congressional allies from the Upper Basin states, such as Frank E. Moss and Wayne Aspinal, wanted to stick it to the conservationists, and the result is that Rainbow Bridge is now paying a horrible price.

Dave Brower, bless his heart, has never given up the fight. Now in his eighties and at last an elected member of the Sierra Club board of directors, Dave has generated a good deal of media attention lately for his idea that it is time to drain Lake Powell and let nature gradually restore Glen Canyon to its former glory. He has been giving speeches all over the West, usually to enthusiastic audiences, expounding on his idea, and on November 6, 1996, his cause got a big publicity boost when the board of the Sierra Club voted unanimously to back him.[2] Writing in *Sierra* early the following year he stated,

> . . . as surely as we made a mistake years ago, we can reverse it now. We can drain Lake Powell and let the Colorado River run through the dam that created it, bringing Glen Canyon and the wonder of its side canyons back to life . . . The sooner we begin, the sooner lost paradises will begin to recover—Cathedral in the Desert, Music Temple, Hidden Passage, Dove Canyon, Little Arch, Dungeon, and a hundred others. Glen Canyon itself can probably lose its ugly white sidewalls in two or three decades. The tapestries can re-emerge, along with the desert varnish, the exiled species of plants and animals, the pictographs and other mementos of people long gone. The canyon's music will be known again . . .[3]

It is certainly true that in this more environmentally conscious and recreation-oriented age Glen Canyon Dam and its associated reservoir have few friends outside the Intermountain West. Even Barry Goldwater, long a proponent of maximum development of the region's water resources, now says, "I have to be honest with you. I'd be happier if we didn't have the lake . . . I'd have a difficult time voting for Glen Canyon again. For me, it's sort of a love affair with the old Colorado River."[4] The idea has evoked enough response that on September 23, 1997, Representative James V. Hansen of Utah held a hearing of the House Committee on Resources to explore the notion. Although called to poke fun at the idea and to ridicule conservationists, Representative Hansen's hearing gave Brower's plan a great deal of national publicity and a favorable media response.

This program, as attractive as it might first appear, faces two nearly insurmountable hurdles. The first of these concerns the very practical problem of how exactly one goes about draining Lake Powell. It is not as easy as simply pulling a plug because there is, in reality, no plug to pull. By using the power generators at full capacity and at the same time sending water through the outlet tubes it is possible, over a period of years, to drop the elevation of Lake Powell down to 3,490 feet and, within a reasonable degree of tolerance, to hold it there. Below this elevation, however, there are no outlets on the face of the dam which would make possible the dumping of any more water, and at this point the reservoir would still be 360 feet deep. The only possible way to drain this remaining water would be to somehow open the diversion tunnels. When the gates to these were finally closed in 1963 the tunnels, both of them, were plugged with four hundred feet of solid concrete. Just to gain access to the gates will mean removing every inch of this material (probably by hand drilling), at which point one would then face the problem of getting the gates open. The intervening thirty-five years have probably rendered that impossible by ordinary mechanical means, so they would have to be blown by some form of explosive charge. Even then the entrances to the tunnels are probably so clogged with

* The 1998 version of the Park Service brochure does have a photograph of the bridge as seen from Lake Powell.

silt and debris that the water will not start flowing through them without a good deal of dredging and hauling. (How this would be done under nearly four hundred feet of water is something yet to be explained.)

The second major obstacle is purely political. While it is true that Glen Canyon Dam and all the other structures of the Colorado River Storage Project were built with federal money and remain U.S. Government property, the water behind them belongs to the states of the Upper Basin. This includes every drop of water in Lake Powell, so simply opening the gates and letting the water flow down to the Lower Basin is probably not legal. In a purely practical sense David Brower is right when he says that Upper Basin water could be easily stored in Lake Mead, but as a matter of law that is not possible. The Colorado River Compact (the Law of the River) specifies the point of division as Lees Ferry, Arizona, and so all Colorado River water flowing past that point is de jure the property of the Lower Basin. That compact has the same status as a treaty to which the federal government is only one party, meaning that a simple act of Congress is not sufficient to alter it. Presumably, all states of the Colorado River Basin would need to renogiate the compact before Lake Powell could be rendered a useless appendage, and anyone with an ounce of common sense knows that such a renogiation is not even a remote possibility.

Even if both the practical and political problems could be overcome, would the draining of Lake Powell restore Glen Canyon to its former delicate and shimmering existence? In all probability the answer is no, certainly not within the lifetime of this civilization and probably not ever. The elimination of the reservoir would reveal a sodden and sickening mess. Great mud flats will cover the old riverbed from wall to wall, and huge mounds of trash, both natural and man-made, will be everywhere. The tamarisk, an exotic tree-like invader from the Mediterranean, would immediately populate the river bottom and stabilize the whole tragic scene, making it very difficult for the Colorado to move the mud and debris out of the gorge. In many places, particularly in the side canyons, whole sections of walls have collapsed into the lake, so when the water is gone these once-lovely edens will be impossibly clogged with boulders. The groundwater flow patterns have been altered by the presence of the lake, meaning that the springs which created the beautiful pools and seeps in places such as Hidden Passage and Little Eden will not return. The canyon walls harboring tapestries and pictographs are in all probability altered forever—as the sandstone dries out the inevitable peeling and flaking will most certainly destroy them. Perhaps in a few thousand years Glen Canyon will evolve into a new creation as beautiful and wondrous as before, but the riparian paradise known to David Brower and too few others no longer exists. Perhaps in some of the more remote side canyons whose lengths are not completely submerged and which have permanent flowing streams (such as Bridge and Aztec Creeks) some restoration in the short term might be possible, but for nearly all the rest the resurrection of Glen Canyon is an impossible dream.

While the lakefront view of the bridge has been significantly and irretrievably spoiled, the view from further up Bridge Creek and from the south still remains gloriously pristine. However, if the Park Service has its way the casual visitor to Rainbow Bridge National Monument will never see any view of the Great Rock-Arch except that provided from the short trail leading up from the boat dock. In 1995 the Park Service instituted a new management criterion for the monument which "encouraged" visitors to avoid approaching the bridge and to never walk under it.[5] In 1996 a new sign was installed at the end of the walkway asking visitors to respect American Indian religious beliefs by observing those two prohibitions. In the spring of 1997 the Park Service also prohibited visitors from walking around the east end of the bridge, ostensibly for the purpose of erosion control. Hence, visitors who come to their national monument by water are essentially told to stay on the boat dock or walkway. This has prompted a number of angry retorts, not the least of which was a ringing editorial from Barry Burkhart of the *Arizona Republic*: "When I visit the Bridge again—and all who love it must—I'll hike that trail. I'll be happy to stay on the trail and preserve the resource, but I'm not willing to give it up for obtuse reasons."[6]

The Natural Arch and Bridge Society also weighted in with a tightly reasoned argument decrying the lack of citizen involvement in so severe a restriction: "Decisions of this magnitude, when made by government employees, bypass the democratic process and fail to consider the broad range of perspectives that could be brought to the issue through public dialog and legislation. This trend, if allowed to continue, could result in a radical change in the

concept of ownership and control of public land throughout the country."[7] Diane East of the superintendent's office at Glen Canyon replied, "We're not physically stopping them [from walking under the bridge]. We're just asking them not to."[8] However, visitors report that on numerous occasions Park Service personnel at the bridge have been adamant in insisting that visitors not go beyond the Park Service walkway.

In making this very momentous management decision the Park Service has apparently gone off on its own with very little basis, either legally or spiritually, for their action. It would appear that the ability of the federal government to designate sites on public land as off limits to visitation because some claim of religious priority was settled definitively back in 1980. One contention of the lawsuit (previously mentioned in chapter 7) by members of the Navajo Nation against the Bureau of Reclamation in 1977 was that by allowing tourists to visit the bridge the government had permitted desecration of the sacred nature of the site and had denied the plaintiffs' rights to conduct religious ceremonies at the prayer spot. On November 3, 1980, the Tenth Circuit Court of Appeals ruled,

> The government here has not prohibited plaintiffs' religious exercises in the area of Rainbow Bridge; plaintiffs may enter the Monument on the same basis as other people. It is the presence of tourists at the Monument and their actions while there that give rise to plaintiffs' complaint of interference with the exercise of their religion. We are mindful of the difficulties facing plaintiffs in performing solemn religious ceremonies in an area frequented by tourists. But what plaintiffs seek in the name of the Free Exercise Clause is affirmative action by the government which implicates the Establishment of the First Amendment. They seek government action to exclude others from the Monument, at least for short periods, and to control tourist behavior . . . Issuance of regulations to exclude tourists . . . from the Monument for the avowed purpose of aiding plaintiffs' conduct of religious ceremonies would seem a clear violation of the Establishment Clause.[9]

The court made it plain that the Park Service already had sufficient authority under 16 USC 1, 3 and 36 CFR 2.7 to regulate visitor behavior while visiting the bridge, so abuse of this sacred site by such practices as littering, drunkenness, and the carving of graffiti can be regulated by enforceable proscription.[10] However, enforcing a ban on certain rights of visitation solely on religious grounds is clearly beyond the authority of the Park Service. It is also worth noting that the court based its decision not on any inadequacies of statutory law, but on Constitutional principles. Hence, not even congressional action, such as the American Indian Religious Freedom Act, would be sufficient to alter the sweep of this decision. The Circuit Court's ruling was appealed, but the Supreme Court declined to hear the case, thus leaving the lower court ruling as definitive.[11]

What is interesting about all of this is that the Navajo Nation itself (as distinguished from its individual members or chapters) has never once contested the right of non-Indians to visit Rainbow Bridge or even to walk under it. In fact the tribe's own Parks and Recreation Department is vigorously selling permits to hike the two trails from Navajo Mountain, which virtually guarantees that such permit holders will have to approach the bridge and almost certainly pass beneath it. My own observations of Navajos visiting the area confirm that most Indians view Rainbow Bridge much as do non-Indians, as a geological wonder and not as an object of religious veneration. Even traditional Navajos have never demanded that outsiders adhere to tribal religious practices but only insist that the Old Ways be treated with respect. In fact, many tribal elders view with deep suspicion those non-Navajos who attempt to delve too deeply into the traditional religion or who try to live as if they were members of the Diné.

It is also worth noting that the area surrounding Rainbow Bridge is not associated with traditional Navajo range and has only been part of the reservation during comparatively recent times. The area was long known among authorities in the Indian Service as the Paiute Strip, and the first mention of its official status as an Indian reservation was in an executive order of May 17, 1889. At that time almost all the Indians living in the area were Southern Paiute. On November 19, 1892, the area was returned to the public domain because of its supposed mineral potential, but a secretarial order of October 16, 1907, again set aside the strip "for the use of the Paiute Indians."[12] At this point its legal status was very unsure, as the secretary of the interior by himself had no statutory authority to create or add to Indian lands. Prospectors were allowed into the area by special permit but with no guarantee that they would be allowed to patent any paying claims. The whole area returned

to the public domain on July 17, 1922, when it was found that there were no Indians living on the strip and that the land was not being utilized. Finally, on March 1, 1933, Congress enacted H.R. 11735 and officially added the area to the Navajo Reservation (47 Stat. 1418). Rainbow Bridge National Monument had been created twenty-three years earlier, so the Navajo Nation has no claim, either by law or tradition, to the 160 acres encompassing the monument. That Rainbow Bridge has an important and lasting place in traditional Navajo religion is beyond question; whether that belief can or should result in the severe type of restriction on visitor access to the monument currently being attempted by the National Park Service is questionable at best.

The Navajo Nation has never disputed the status of Rainbow Bridge National Monument nor has it tried to interfere with Park Service management or visitor access. This does not mean, however, that on an unofficial level all has been sweetness and light. On Friday, August 11, 1995, a group of a dozen or so Navajos blockaded the monument and attempted to prevent all visitation. Calling themselves the "Protectors of the Rainbow," the group stretched a rope across the trail and held signs protesting the conditions of life on the Navajo Reservation and the "many desecrations and defilements permitted by the Park Service."[13] While ostensibly there to conduct "cleansing ceremonies," the main focus of their anger seemed to be the contract which had been recently issued by the Park Service to ARA Mark, Inc., a Philadelphia-based company, to run commercial tours on Lake Powell. It later emerged that one of the protestors had desired that contract, or a portion thereof, for himself and felt that as a Navajo the privilege of guiding boat trips to the bridge was his by right.[14] The tribe disavowed any knowledge of or support for the group. A decided lack of traditional Diné values on the part of the protestors was illustrated by the fact that several of them climbed to the top of the bridge and were photographed there, something a devout Navajo would never, ever do.

The Park Service, in what was probably a smart move from a public relations standpoint, closed the monument to the public and waited them out. By the following Tuesday the group had dispersed and the situation at Rainbow Bridge returned to normal. The "Protectors of the Rainbow" has never been heard from since. By taking a hands-off policy and avoiding confrontation, the Park Service defused what could have been an ugly situation, but at the same time a dangerous precedent was set. By not subsequently pursuing and bringing to justice those who had clearly broken a multitude of laws, the U.S. Government has served notice that the bridge is available as a focal point and backdrop for any splinter group, particularly of American Indians, who wants to publicize its cause. Several present and past Park Service employees have expressed to me the fear that this laissez faire attitude might have dire consequences for similarly situated public enclaves such as Navajo National Monument and Hovenweep where, unlike Rainbow Bridge, federal employees and their families live and work. It also adds unnecessary confusion to the continuing debate over the full meaning and extent of tribal sovereignty and raises the possibility that unique and irreplaceable public resources might be held hostage over that or some similar issue. It may take a violent incident before the Park Service realizes that it is one thing to defuse a crisis, but quite another to ignore one.

As evening begins to softly wrap itself around the canyon, Bill and I turn and walk back up the trail, pass under the arch and head toward Echo Camp. In twilight time this place is the epitome of tranquility. There is certainly no hint in this lovely, peaceful place of the deep and often bitter passions which have swirled around Rainbow Bridge during the past forty years, and certainly no foreshadowing of any future controversies which even now might be festering just beneath the surface. Here the evening breeze softly rustles the leaves of the great old cottonwoods, a few birds twitter an occasional song, and the little stream slides gently past. Everything is as it should be, as it has been for centuries and as it will be, hopefully, for many, many years into the future.

As a campsite, this alcove is everything I hoped it would be—comfortable, green, and silent. It is the sort of place where one could imagine spending a great deal of time simply watching the seasons come and go or the eons drift by. Here the "real world" with its machines, noise, and confusion seems very, very far away indeed. Bill has brought along one of those Geographical Positioning System (GPS) devices and spends some time after supper trying to figure out how to make the thing work. I simply sit propped up against my pack staring into the alcove and trying to absorb the spirit of this place, not knowing when, or if, I might ever pass this way again. It is easy to imagine that time not so long past when the

alcove rang with the happy, excited voices of tourists just down from Rainbow Lodge, the crackling of the large cooking fires, and the soft whinnies of the horses and pack animals. The human remnants of those days sit moldering around us, calling to mind the era when each and every trip to the great arch was an adventure to be written up in personal diaries or published in geographic and travel magazines. There are too few such places left in the lower forty-eight these days, scarcely any patch of wilderness remaining that is at a distance greater than ten linear miles from a serviceable automobile road.

The next morning dawns pure and utterly silent. The early morning sky is a colorless slate, and the world stands as if empty. Bill and I are up early, not only to enjoy this very special time, but also for the purpose of using these few pleasantly cool hours to do some serious walking. We shall be returning the same way we came in—up Bridge Creek, onto Navajo Mountain, and then past Oak Creek and down once again to Nasja Creek. It is not a long hike, but an early start will help mitigate the warm, treeless miles across the exposed north slope of the mountain. There is time for one last look at the tiny half-ring of Rainbow Bridge before we turn upstream and are once more totally immersed in the vast beauty of a great canyon.

We arrive back at Surprise Valley about 1:30 P.M. I give some thought to the possibility of continuing for a few more miles, but the afternoon is warm, and the thought of climbing the Hoskininni Steps and making the long, rugged descent into Bald Rock Canyon just doesn't seem all that appealing right now. Bill is tired, too, and the prospect of a long soak in a downstream pool is a powerful reason to stop. Hence, we spend the afternoon near the creek and in what little shade the pinyons and junipers afford. As the day ends I take an evening hike to the north end of the valley and climb a small hill, watching the sunset paint subtle pastels on the cliffs and cast the last splash of daylight on the topmost spires of Navajo Mountain. It is nearly dark when I return to camp; already the fuzzy image of Hale-Bopp and the faint outline of the Great Bear hang just above the mesas. Here, unlike at Rainbow Bridge, it is possible to intimately connect with the historicity of this vast and unmarked wilderness and to feel something of the wonder and excitement of those, both great and obscure, who have camped on the very ground we now occupy. Stewart Udall was certainly correct—this area would make a superb national park. However, the careful stewardship of the Navajo Nation has preserved the wilderness here even without any official designation, and this condition is likely to continue on into the indefinite future. What is really remarkable is that in spite of a total lack of any regular attention or supervision the whole area is virtually clear of any refuse and substantially free of any sign of man's passage. Those who come this way are taking very good care of the landscape.

In purely human terms, the history of Rainbow Bridge has been very short, encompassing barely two generations. Yet, in that time, it has been the scene of an almost overwhelming number of controversies, most of which remain unresolved. Is the effect of Lake Powell on the structure of the bridge as benign as bureau engineers have asserted, or will the constant rise and fall of the lake so weaken the underlying strata that one day soon the whole timeless and magnificent span might simply collapse into the water? Has the fatal crack already appeared and only waits upon the last precious millimeter before bringing the history of Rainbow Bridge to an end? And what of future management of this place? Will the dream of a new national or tribal park become a reality, guaranteeing the integrity of a wilderness set aside for all to enjoy, or will relations with the Indians deteriorate to such an extent that the region might be closed to visitation and the Great Rock-Arch become once again the focus of bitterness and contention?"

I have many unanswered questions as our last morning on the trail again brings light and color to the cliffs surrounding this desert eyrie. There is time only for breakfast, packing up, and taking one final look around. A gentle early-morning breeze rustles the new foliage hanging green from the cottonwoods and scatters last year's leaves dry around our feet. I pick up my pack, turn toward the trail, and cross the creek.

Notes

Chapter 2

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Chapter 3

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